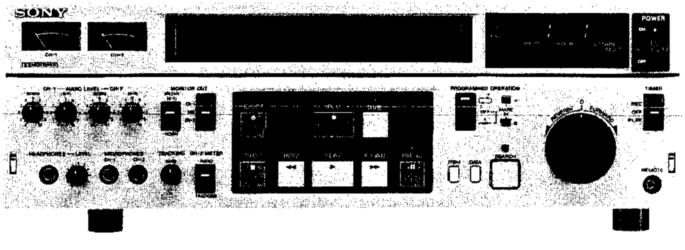
SONY®

VIDEOCASSETTE RECORDER

SVO-9620

SERVICE MANUAL



SVHS
625

VHS
PAL

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GENERAL DISCRIPTION

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About This Manual

This manual explains how to use the Sony SVO-9620 videocassette recorder. This section explains the purpose and organization of the manual. Reading this section first will help you decide which parts of the manual you should read first, depending on your experience of operating VTRs.

Purpose and intended readership

This manual contains the information you need to operate this VTR, including the names and functions of the component parts, details of settings and adjustments, and the procedures for recording and playback.
This VTR is designed for use by a wide range of users, from cable television stations to general business operators. Likewise, this manual is aimed at the same wide range of users, from experienced engineers to those users who have never used this type of VTR before. If you find any unfamiliar terms while reading the manual, consult the footnotes at the bottom of the page as well as the glossary at the end of the manual.

Organization

The following is a brief summary of the chapters and appendixes constituting this manual. Note also that the opening page of each chapter gives a brief summary of the contents of the chapter.

Chapter 1, "SVO-9620 Introduction" describes the special features of the VTR.

Chapter 2, "Location and Function of Parts and Controls" explains the purposes and functions of the parts of the VTR.
If you have used a VTR before, you will be able to operate the VTR after briefly reading this chapter. If you have never used this type of VTR before, read through this chapter thoroughly to familiarize yourself with the parts and controls.
Refer to this chapter to clarify the functions of the controls while you are operating the VTR.

Chapter 3, "Before Using Your SVO-9620" explains necessary precautions and how to set up the VTR prior to operation.

Chapter 4, "Recording" explains the overall recording operation, and also explains audio signal dubbing, timer recording, and sensor recording.

Chapter 5, "Playback" explains playback, search and repeat, and timer playback.

Chapter 6, "Maintenance" explains troubleshooting, error messages and their meanings, and the cleaning of the video heads.

Appendixes

The appendixes contain the following sections:

- Menu Items and Their Functions
- Specifications
- Glossary

Index

Conventions

Procedure format

This type of figure shows the switches and controls used to achieve an operation. The numbers correspond to those in the figure that follows.

Technical terms

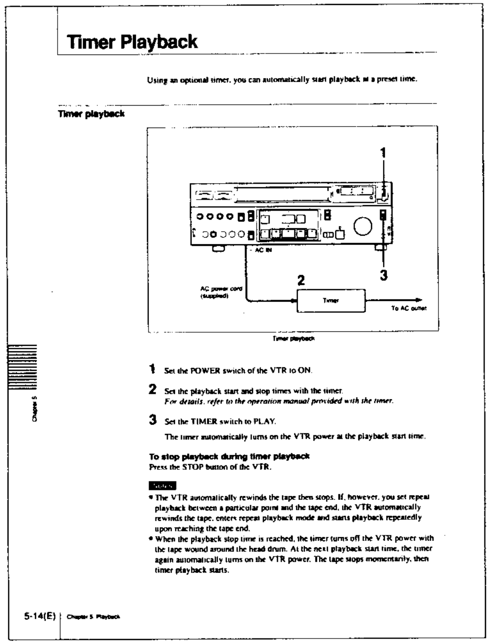
Technical terms are explained in the glossary of terms at the end of this manual.

Reference information

Points you to another section of the manual where you can find additional information. Written in italics.

Important notes

Be sure to read the sections marked Note. They explain points that you should be aware of if you are to operate the VTR correctly and prevent malfunctions. Also read "Safety Precautions" and "Handling Precautions" on page 3-3(E).



Timer Playback

Using an optional timer, you can automatically start playback at a preset time.

Timer playback

Timer playback

1 Set the POWER switch of the VTR to ON.

2 Set the playback start and stop times with the timer.
For details, refer to the operation manual provided with the timer.

3 Set the TIMER switch to PLAY.

The timer automatically turns on the VTR power at the playback start time.

To stop playback during timer playback
Press the STOP button of the VTR.

Notes

- The VTR automatically rewinds the tape then stops. If, however, you set repeat playback between a particular point and the tape end, the VTR automatically rewinds the tape, enters repeat playback mode and starts playback repeatedly upon reaching the tape end.
- When the playback stop time is reached, the timer turns off the VTR power with the tape wound around the head drum. At the next playback start time, the timer again automatically turns on the VTR power. The tape stops momentarily, then timer playback starts.

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Chapter 1
SVO-9620 Introduction

This chapter describes the special features of the VTR.

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SVO-9620 Features

The VTR has the following features.

High picture quality

S-VHS format

This VTR uses the S-VHS format. This provides a high-quality color pictures with a resolution of more than 400 lines.

Wide track design

The recording/playback devices of this VTR incorporate a 58 μm track design to enable stable sound and pictures.

Digital comb filter

This VTR uses a digital comb filter to separate the composite video signal into Y and C signal. This enables sharp picture definition.

YX filter

This VTR also uses a YX filter to reduce cross-color (where one color mixes with another) or beat (diagonal stripes).

High sound quality

Hi-fi audio recording (four-channel audio signal recording)

This VTR incorporates a hi-fi(AFM: Audio Frequency Modulated) stereo audio recording system to provide high-quality sound recording. The recording and playback of two channels, of normal audio and hi-fi audio, giving a total of four channels, is possible. A commentary or music can be added to channel of the normal audio by using the audio dubbing function.

High reliability

Direct-drive reel motors

This VTR employs two direct-drive reel motors. A highly rigid material is used for the lower drum to prolong its service life. In addition, the beltless mechanism offers high reliability.

Wide range of functions

LED time counter

The time counter displays the control (CTL) signals recorded onto a tape to indicate the tape running time in hours, minutes and seconds. This is also useful for checking the recording time.

Programmed operation

Programmed operation allows you to locate specified points on a tape and to automatically repeat a desired portion.

High-speed picture search

This VTR supports high-speed picture search with a search dial. Recognizable color pictures at speeds ranging from 1/20 to 10 times normal speed are available in search mode. This facility allows any desired point on the tape to be located quickly. If you are using the SVRM-100 remote control unit (optional), color pictures at speeds ranging from 1/20 to 10 times normal speed are also available.

Automatic control of video recording level

The automatic gain control (AGC) circuit maintains the proper video level to assure optimum-quality video recording.

Timer recording and playback

By setting the TIMER selector to either REC or PLAY, the VTR records or plays back when the power is automatically turned on.

Menu function

The menu function allows settings to be made easily by using the buttons on the front panel.

Playback of dual color systems

This VTR can play back both PAL- and NTSC-recorded signals through SYSTEM SELECT switch setting. The NTSC-recorded signals are played back based on the $NTSC_{4.43}$ system.

Auto head cleaner

Each time the VTR starts and ends playback/recording, a cleaning roller automatically passes over the video/FM audio (rotary) heads, removing tape residue and enabling preventive care of the tape heads.

Automatic cassette ejection at tape end

When a tape reaches its end, the VTR automatically ejects the cassette. This prevents accidental erasure of valuable data. Automatic tape ejection can be inhibited through menu operation.

Connectors

External SYNC IN connector

The SYNC IN connector enables the VTR to be synchronized with other video equipment.

8-pin VTR connector

The TV OUT connector allows the VTR to simultaneously monitor video and audio signals by connecting an external monitor with a single cable.

Loop-through output

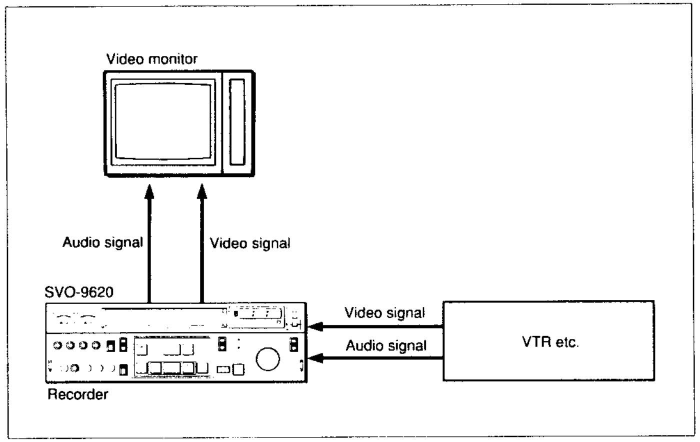
A video input signal, connected to one VIDEO IN connector, is directly output from the other VIDEO IN connector. Pictures appear on the connected monitor, therefore, with good resolution even during recording. Hence you can record pictures while viewing them on the monitor.

Suggested Configurations

The following configurations are suggested.
- Recording signals input from other video equipment
- Recording signals sent via a satellite
- Controlling the VTR using a simple editing control unit

Recording Signals Input from Other Video Equipment

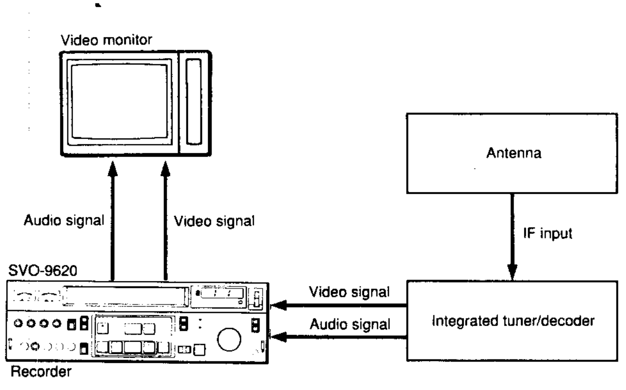
The following configuration is suggested for recording video signals input from other video equipment.



Recording signals input from other video equipment

Recording Signals Sent via a Satellite

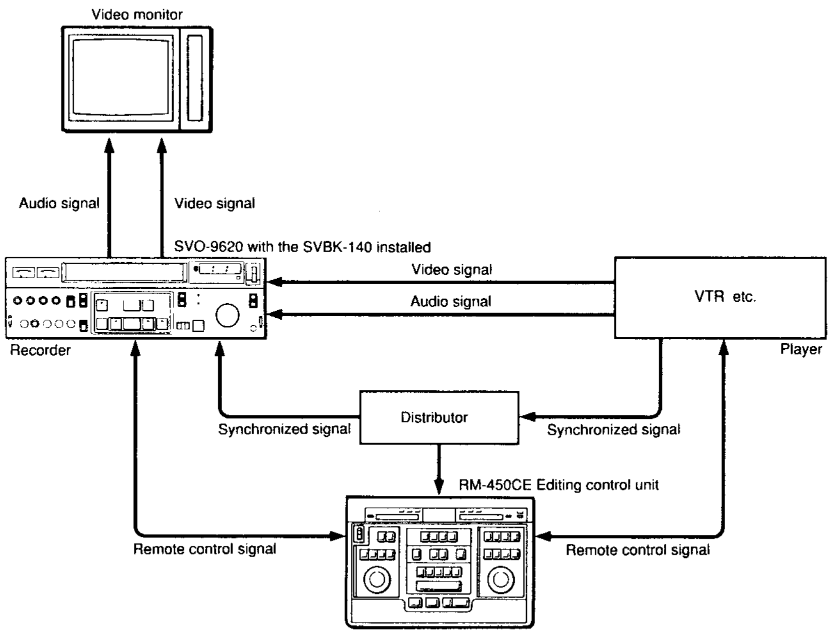
The following configuration is suggested for automatically recording signals sent via a satellite by using the sensor recording function.


Video monitor
Audio signal
Video signal
SVO-9620
Recorder
Antenna
IF input
Video signal
Audio signal
Integrated tuner/decoder

Recording signals sent via a satellite

Controlling the VTR Using a Simple Editing Control Unit

The following configuration is suggested for controlling the VTR with the optional SVBK-140 RS-422A interface board and other video equipment by using the RM-450CE editing control unit.


Video monitor
Audio signal
Video signal
SVO-9620 with the SVBK-140 installed
Video signal
Audio signal
VTR etc.
Recorder
Player
Distributor
Synchronized signal
Synchronized signal
RM-450CE Editing control unit
Remote control signal
Remote control signal

Controlling the VTR using a simple editing control unit

Optional Accessories for Expanding the System

The following accessories can be used to enhance the VTR.

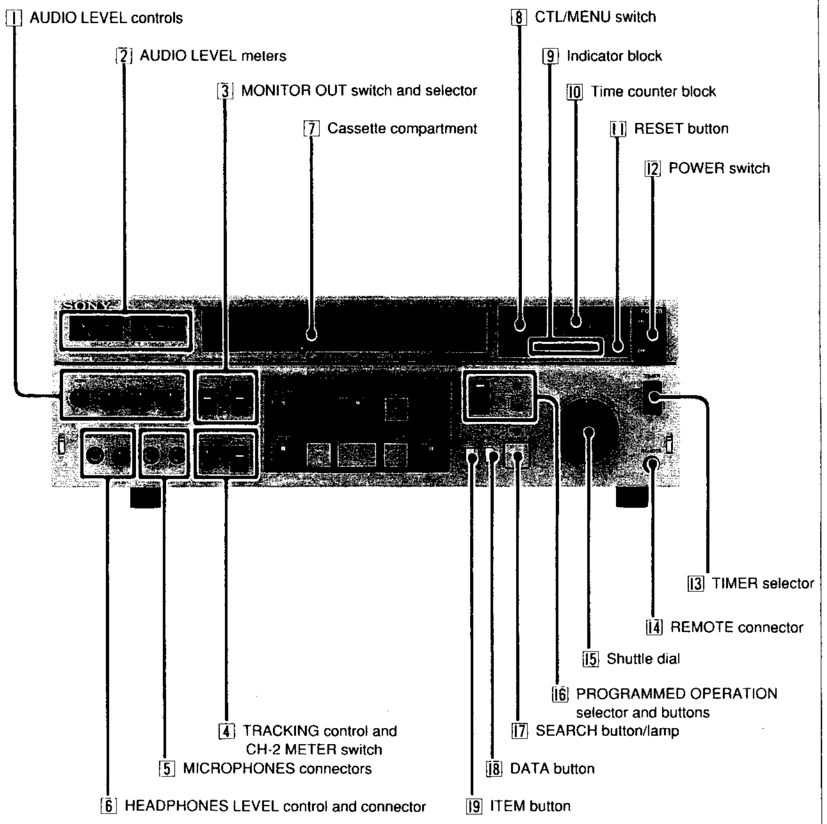
Model name	Function
SVRM-100 Remote control unit	This unit enables remote control of the VTR by connecting the unit to the REMOTE connector of the VTR. But, the following buttons do not function in this configuration. • FREEZE button • INDEX button • MARK button • ERASE button
SVBK-100 33-pin interface board	This board provides a 33-pin parallel interface that enables the VTR to be connected to a remote control unit (RM-580/500/450CE/440 etc.) employing a 33-pin parallel interface board. You can thus control the VTR from the remote control unit. (However, the editing function of the RM-450CE/440 does not operate.)
SVBK-120 RS-232C interface board	This board provides an RS-232C serial interface that allows a computer to be connected. You can thus control the VTR from a computer.
SVBK-130 Satellite interface board (available soon)	This board provides a satellite interface. You can use this board to construct a satellite system.
SVBK-140 RS-422A interface board	This board provides an RS-422A serial interface that allows the RM-450CE editing control unit to be connected. You can thus control the VTR from this editing control unit.
SVBK-150 Digital noise reduction board	This board reduces digital chroma noise and corrects time base errors to increase picture sharpness, reduce jitter, and reduce color drop out interpolation.
SVBK-160 Time code board	This board reads and generates time codes. When you want to record time codes onto a normal audio track of a tape, or play back a tape onto which time codes have been recorded, use this board with the SVBK-130 or SVBK-140 because this board can not function without them. For details, refer to the operation manual supplied with the SVBK-160 or contact your Sony dealer.

Chapter 2
Location and Function of Parts and Controls

This chapter explains the purposes and functions of the parts of the VTR.
If you have used a VTR before, you should be able to operate the VTR after briefly reading this chapter. If you have never used this type of VTR before, read through this chapter thoroughly to familiarize yourself with the parts and controls. While you are operating the VTR, refer to this chapter to clarify the functions of the controls.

Front Panel ....2-3(E)
Sub Panel ....2-8(E)
Rear Panel...2-11(E)

Front Panel


1 AUDIO LEVEL controls
2 AUDIO LEVEL meters
3 MONITOR OUT switch and selector
7 Cassette compartment
8 CTL/MENU switch
9 Indicator block
10 Time counter block
11 RESET button
12 POWER switch
SONY
13 TIMER selector
14 REMOTE connector
15 Shuttle dial
16 PROGRAMMED OPERATION selector and buttons
17 SEARCH button/lamp
18 DATA button
19 ITEM button
4 TRACKING control and CH-2 METER switch
5 MICROPHONES connectors
6 HEADPHONES LEVEL control and connector

Front panel

1 AUDIO (recording) LEVEL controls
These controls are used to adjust the audio recording level for each channel.
Hi-Fi: used to make adjustments in hi-fi recording mode.
NORM: used to make adjustments in normal recording mode.

2 AUDIO LEVEL meters
These meters indicate the audio levels: the recording levels while the VTR is recording audio signals, and the playback levels while the VTR is playing back audio signals.

Front Panel (Continued)

[3] MONITOR OUT switch and selector METER select switch

This switch is used to select the input or output audio signal to be indicated by the AUDIO LEVEL meters [2]. It can also be used to select the audio output signal to be output to the AUDIO MONITOR connector on the rear panel.

Hi-Fi: While the VTR is recording a signal, the input audio signals from the AUDIO IN Hi-Fi connectors are indicated by the AUDIO LEVEL meters [2].
When the VTR is playing back a signal, an output audio signal, recorded in hi-fi recording mode and output to the HEADPHONES connector, AUDIO MONITOR connector and TV OUT connector, are indicated by the AUDIO LEVEL meters [2].

NORM: When the VTR is recording a signal, the audio signals input through the AUDIO IN NORM connectors are indicated by the AUDIO LEVEL meters [2].
When the VTR is playing back a signal, the output audio signals, recorded in normal recording mode and output to the HEADPHONES connector, AUDIO MONITOR connector and TV OUT connectors, are indicated by the AUDIO LEVEL meters [2].

CH-1/MIX/CH-2 selector

This selector is used to select the channel to be output through the HEADPHONES connector, AUDIO MONITOR connector, and TV OUT connector. It can also be used to select the channel to which the VTR outputs the audio signal set with the METER select switch [3].

CH-1/MIX/CH-2 selector setting	Audio signal output from HEADPHONES connector	Audio signal output from AUDIO MONITOR connector and TV OUT connector
CH-1	channel-1	channel-1
MIX	stereo audio signal	mixed from channel-1 and channel-2
CH-2	*channel-2*	channel-2

[4] TRACKING control and CH-2 METER switch

The TRACKING control is used to adjust the tracking. The CH-2 METER switch is used to select the signal indicated by the CH-2/TRACKING level meter [2].

TRACKING control

Normally, set this control to FIXED. Should noise, snow or streaks appear on a picture recorded on another VTR, set the CH-2 METER switch to TRACKING, then turn this control until the maximum audio level, as indicated by the CH-2/TRACKING level meter, is obtained.

CH-2 METER switch

This switch is used to select the function of the CH-2/TRACKING level meter [2]. It can be used either as a level meter or for tracking control.

AUDIO: The meter operates as a level meter. Normally, set the switch to this position.

TRACKING: The meter is used for tracking control. To control tracking, turn the TRACKING control so that the maximum audio level, as indicated by the CH-2/TRACKING level meter, is obtained while the VTR is playing back.

[5] MICROPHONES connectors(phone jacks)

To record audio signals, connect a microphone to each channel. Connect a microphone to the connector for the desired channel. Adjust the recording audio levels with the AUDIO LEVEL controls [1].

[6] HEADPHONES LEVEL control and connector(stereo phone jack)

To monitor the recording/playback audio signal selected with the MONITOR OUT switch and selector [3], connect a pair of stereo headphones here. Adjust the volume with the LEVEL control.

[7] Cassette compartment

Insert an S-VHS or VHS cassette here.

[8] CTL/MENU(control signal/menu) switch

This switch selects the data to be displayed by the time counter block [10].

CTL: reads CTL signals on the tape and displays the tape transport time in hours, minutes and seconds. Normally, keep the switch set to this position.

MENU: Displays menu settings in STOP mode. No other operations are possible in menu mode.

[9] Indicator block

Each lamp lights in the following cases:

▭ lamp: lights when a cassette is loaded into the VTR.

AUTO OFF lamp: lights when the power is applied but moisture has condensed inside the VTR. While this indicator is lit, a cassette can not be loaded into the VTR.

S-VHS lamp: lights when the VTR is S-VHS recording or playback mode.

SENSOR REC lamp: lights while the VTR is performing sensor recording or when the VTR is ready for sensor recording.

[10] Time counter block

This block displays the data (time or the menu items) selected with the CTL/MENU switch [8].

[11] RESET button

Setting the CTL/MENU switch [8] to CTL causes the tape transport time to appear on the time counter block [10]. Pressing this button resets the indicator to "0:00:00."

[12] POWER switch

This switch turns on the power of the VTR. The AUDIO LEVEL meter [2] and the time counter block [10] will light.

[13] TIMER selector

This selector is used to enable automatic recording or playback with an optional timer.

REC: automatic recording with a timer.

OFF: no timer is used. Normally, keep the selector set to this position.

PLAY: automatic playback with a timer.

[14] REMOTE connector (stereo minijack)

This connector is used to connect the optional SVRM-100 remote control unit. Recording, playback, fast-forward, rewind and search operations can be remotely controlled.

[15] Shuttle dial

By turning this dial with the SEARCH button [17] held down, the playback speed can be varied between 1/20 and 10 times normal speed. Turning the dial clockwise (to FORWARD) makes the tape run forwards. Turning the dial counterclockwise (to REVERSE) makes the tape run backwards. At the center "0" position, a still picture is output.

[16] PROGRAMMED OPERATION selector and buttons

This selector and buttons are used to enable programmed operation.

PROGRAMMED OPERATION selector

↻:
- To repeatedly play a particular portion.
- To check the points memorized with the MARK IN A and B buttons.

OFF:
- For normal operation. When the VTR is to be controlled from a remote control unit connected to the REMOTE connector, set this switch to OFF.
- To memorize points set with the MARK IN A and B buttons for programmed operation.

←:
- To locate a point memorized with the MARK IN A button.
- To memorize points, set with the MARK IN A button, for programmed operation.

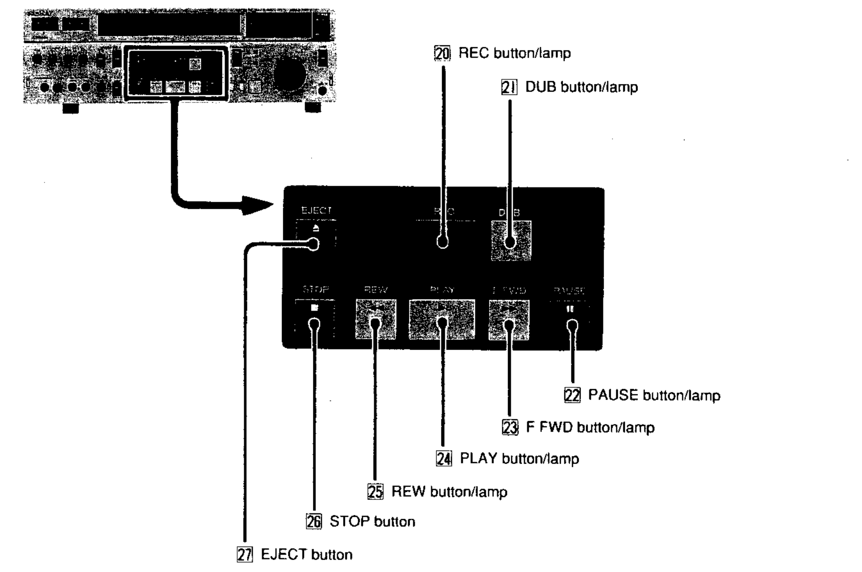
MARK IN A and B buttons

Press to memorize the current time counter value. You can memorize only one point with each button. If you press the button several times, only the last point will be memorized.

17 SEARCH button/lamp
Press to activate the shuttle dial 15. The lamp will light.

18 DATA button
With the CTL/MENU switch 8 set to MENU, press this button to set the data item selected with the ITEM button 19.

19 ITEM button
With the CTL/MENU switch 8 set to MENU, press this button to select the item to be set.



Front panel (continued)

20 REC(recording) button/lamp
For recording, press the PLAY button 24 while holding down the REC button. The lamp will light during recording.

21 DUB(audio dubbing) button/lamp
To add sound to a tape on which a video signal has been previously recorded, press the PLAY button 24 while holding down the DUB button. The sound will be recorded onto a normal audio channel set with the menu (channel-1, channel-2, or channel-1 and channel-2). The lamp lights during recording.

22 PAUSE button/lamp
Press to stop the tape momentarily. The lamp lights while the VTR is in STOP mode.
To restart the tape, press the PAUSE button again.

23 F FWD(fast-forward) button/lamp
Press to fast-forward the tape. The lamp lights during fast-forwarding.

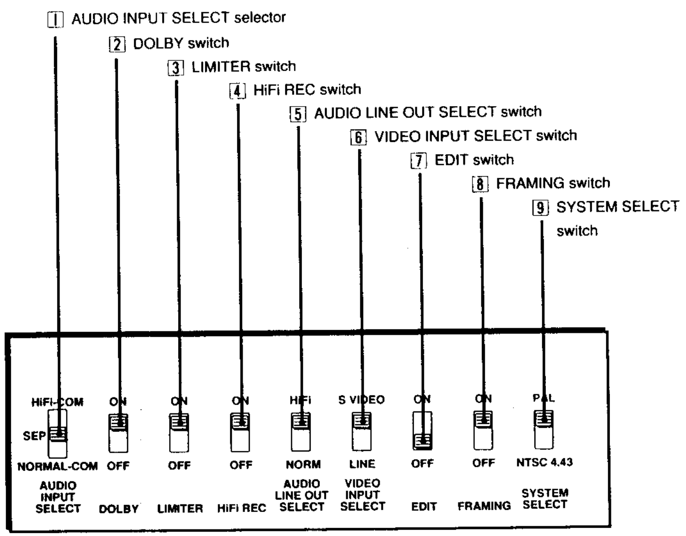
24 PLAY(playback) button/lamp
Press to play back the tape. Pressing this button while holding down the REC button 20 starts recording. The lamp lights.

25 REW(rewind) button/lamp
Press to rewind the tape. The lamp lights while the VTR is rewinding the tape.

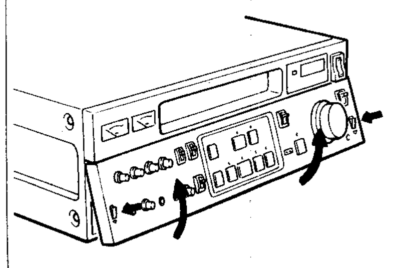
26 STOP button
Press to completely stop the tape transport.

27 EJECT button
Press to eject the cassette.

Sub Panel

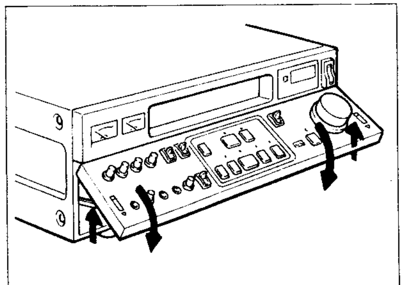

1 AUDIO INPUT SELECT selector
2 DOLBY switch
3 LIMITER switch
4 HiFi REC switch
5 AUDIO LINE OUT SELECT switch
6 VIDEO INPUT SELECT switch
7 EDIT switch
8 FRAMING switch
9 SYSTEM SELECT switch
HiFi-COM
SEP
NORMAL-COM
AUDIO INPUT SELECT
ON
OFF
DOLBY
ON
OFF
LIMITER
ON
OFF
HiFi REC
HiFi
NORM
AUDIO LINE OUT SELECT
S VIDEO
LINE
VIDEO INPUT SELECT
ON
OFF
EDIT
ON
OFF
FRAMING
PAL
NTSC 4.43
SYSTEM SELECT

How to open the lower front panel



While pushing down the buttons on the right and left sides of the panel, pull the lower panel up.

How to close the lower front panel



While lifting the stays on the right and left sides of the panel, drop the lower panel down.

Sub panel

1 AUDIO INPUT SELECT selector

This selector is used to select the audio signal input through the Hi-Fi connector or NORM connector for recording on a hi-fi or normal recording channel. To record a signal in hi-fi recording mode, set the HiFi REC switch 4 to ON.

Selector setting	Signals to be recorded	Channels to be recorded
HiFi-COM	Signal from Hi-Fi connectors	On both hi-fi and normal recording channel
SEP	Signal from Hi-Fi connectors	On hi-fi recording channel
	Signal from NORM connectors	On normal recording channel
NORMAL-COM	Signal from NORM connectors	On both hi-fi and normal recording channel

2 DOLBY switch

This switch is used to select whether the Dolby[1] system is applied to normal recording and playback. This system provides a high S/N ratio and improves sound quality.

ON: records or plays back the sound with the Dolby system.

OFF: records or plays back the sound without the Dolby system.

Note

Be sure to make the same selection when recording and playing back. If the Dolby switch is set to OFF when the VTR is playing back a signal recorded with the Dolby system, high sound levels may be emphasized.

3 LIMITER switch

After adjusting the recording levels, set this switch to ON to activate the limiter circuit. This circuit enables the constant recording of normal audio signals and prevents distortion caused by excessive input, for example a sudden loud noise when recording the signal input from a microphone.

ON: activates the limiter circuit.

OFF: deactivates the limiter circuit.

4 HiFi REC(hi-fi recording) switch

This switch is used to select whether the VTR records audio signals in hi-fi recording mode.

ON: records in hi-fi recording mode (Four-channel recording)

OFF: does not record in hi-fi recording mode (Normal recording mode only)

5 AUDIO LINE OUT SELECT switch

This switch is used to select the audio signal to be output from the AUDIO OUT NORM/Hi-Fi connectors on the rear panel.

HiFi: outputs a hi-fi recording signal.

NORM: outputs a normal recording signal.

Note

The hi-fi recording signal is output from the AUDIO OUT Hi-Fi connector, regardless of how this switch is set.

---

[1] Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ᗡD are trademarks of Dolby Laboratories Licensing Corporation.

6 VIDEO INPUT SELECT switch

This switch is used to select the connector to which a video signal is input: the VIDEO IN connector or S VIDEO IN connector.

S-VIDEO: records a Y and C signal input through the S-VIDEO IN connector.

LINE: records a video signal input through the VIDEO IN connector.

7 EDIT switch

Set this switch to ON when duplicating a signal. This will prevent degradation of the video signal.

ON: Duplicating the signal

OFF: Normal operation

8 FRAMING switch

This switch is used to set whether the VTR perform color frame controls when the VTR is recording a scene transition.

ON: performs color frame controls. Normally, keep the switch to this position.

OFF: does not perform color frame controls.

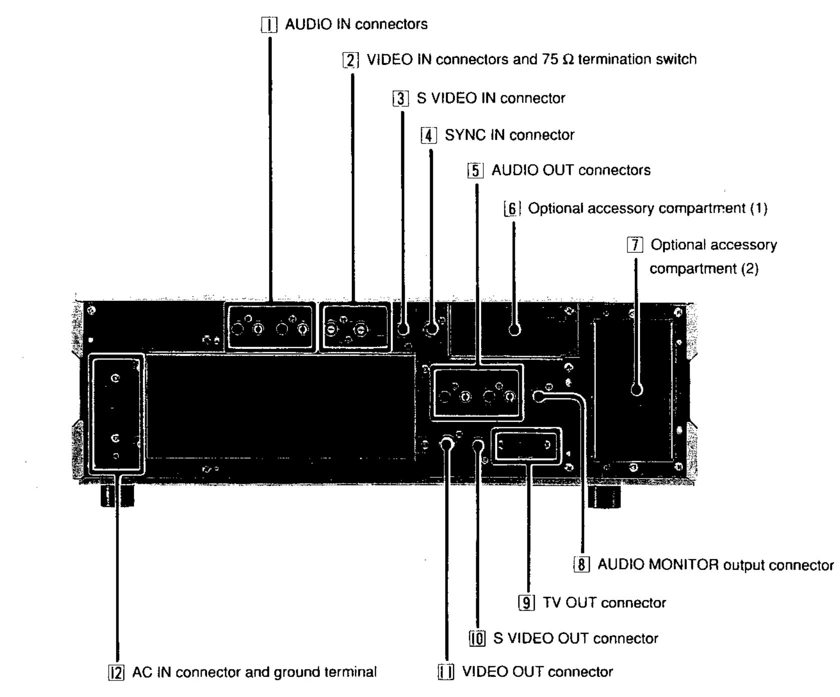
9 SYSTEM SELECT switch

This switch is used to select the color system of a video signal to be played back.

PAL: To play back PAL-recorded signals. Normally, set this switch to this position.

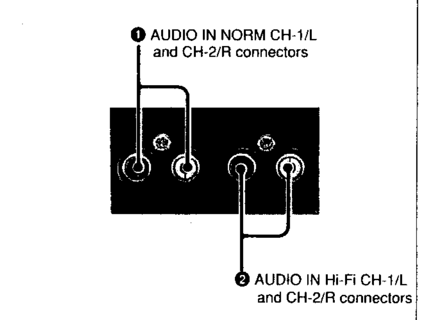
NTSC 4.43: To play back NTSC-recorded signals using a monitor which can display signals of multiple color systems, such as Sony PVM-1442QM.

Rear Panel


1 AUDIO IN connectors
2 VIDEO IN connectors and 75 Ω termination switch
3 S VIDEO IN connector
4 SYNC IN connector
5 AUDIO OUT connectors
6 Optional accessory compartment (1)
7 Optional accessory compartment (2)
8 AUDIO MONITOR output connector
9 TV OUT connector
10 S VIDEO OUT connector
11 VIDEO OUT connector
12 AC IN connector and ground terminal

Rear panel

1 AUDIO IN(input) connectors


❶ AUDIO IN NORM CH-1/L and CH-2/R connectors
❷ AUDIO IN Hi-Fi CH-1/L and CH-2/R connectors

AUDIO IN connectors

❶ AUDIO IN(input) NORM CH-1/L(channel-1/left) and CH-2/R(channel-2/right) connectors (phono jacks)

Used to input an audio signal for normal recording.

❷ AUDIO IN(input) Hi-Fi CH-1/L(channel-1/left) and CH-2/R(channel-2/right) connectors (phono jacks)

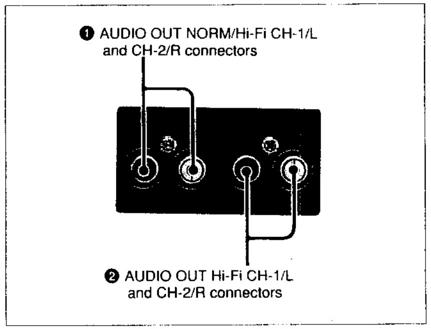
Used to input an audio signal for hi-fi recording.

2 **VIDEO IN(input) connectors (BNC type) and 75 Ω termination switch**
Used to input a composite video signal. Bridge connection is allowed. To set a bridge connection, set the 75 Ω termination switch to OFF. For the last unit of a bridge connection or for no bridge connection, set the 75 Ω termination switch to ON.

3 **S VIDEO IN(input) connector (4-pin mini DIN)**
To input the Y and C signals separately.

4 **SYNC IN(synchronizing signal input) connector (BNC type)**
Used to input an external synchronizing signal.

5 **AUDIO OUT(output) connectors**


❶ AUDIO OUT NORM/Hi-Fi CH-1/L and CH-2/R connectors
❷ AUDIO OUT Hi-Fi CH-1/L and CH-2/R connectors

AUDIO OUT connectors

❶ AUDIO OUT(output) NORM/Hi-Fi CH-1/L(channel 1/left) and CH-2/R(channel 2/right) connectors (phono jacks)
Used to output the hi-fi recording or normal recording audio output signals, selected with the AUDIO LINE OUT SELECT switch on the sub panel.

❷ AUDIO OUT(output) Hi-Fi CH-1/L(channel 1/left) and CH-2/R(channel 2/right) connectors (phono jacks)
Used to output the hi-fi recording audio output signal.

6 **Optional accessory compartment (1)**
This compartment is used to install the SVBK-100 or SVBK-120.

Note
Nothing can be installed here when optional accessory compartment (2) 7 is being used.

7 **Optional accessory compartment (2)**
This compartment is used to install the SVBK-130 or SVBK-140.

Note
Nothing can be installed here when optional accessory compartment (1) 6 is being used.

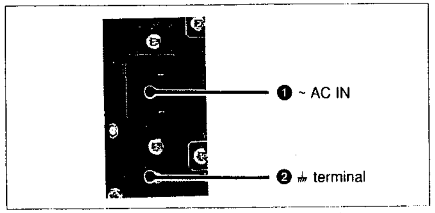
8 **AUDIO MONITOR output connector (phono jack)**
Used to output the audio signal selected with the MONITOR OUT CH-1/MIX/CH-2 selector on the front panel.

9 **TV OUT (output) connector (8-pin)**
Used to output the video and audio signal to a video monitor having an 8-pin VTR connector. The audio signal recorded onto the channel selected with the MONITOR OUT selector is output.

10 **S VIDEO OUT (output) connector (4-pin mini DIN)**
Used to output the Y and C signals separately.

11 **VIDEO OUT (output) connector (BNC type)**
Used to output a composite video signal.

12 **AC IN(input) connector and ground terminal**



AC IN connector and ground terminal

❶ ∿ **AC IN:** Used to connect the VTR to an AC power outlet with the supplied AC power cord.
❷ ⏚ **(ground) terminal:** Used to connect a ground line.

Chapter 3
Before Using Your SVO-9620

This chapter explains how to set up the VTR. You should be familiar with the contents of this chapter before attempting to operate the VTR.

Precautions .... **3-3(E)**
  Safety Precautions .... 3-3(E)
  Handling Precautions .... 3-3(E)
Connections .... **3-5(E)**
  Connecting Other Video Equipment .... 3-5(E)
  Controlling the VTR with a Remote Control Unit .... 3-7(E)
Handling Cassettes .... **3-8(E)**
  Compatible Cassetttes .... 3-8(E)
  Preventing Accidental Erasure .... 3-9(E)
  Notes on Handling and Storing Cassettes. .... 3-10(E)
  Inserting a Cassette .... 3-10(E)
  Ejecting a Cassette .... 3-11(E)

Precautions

Safety Precautions

Power supply

- Connect the VTR to a 220 to 240 V AC power outlet.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the VTR with a damaged power cord.
- Disconnect the power cord from the AC outlet by grasping the plug, not by pulling the cord.

Do not open the cabinet

Opening the cabinet may damage precision components or result in electric shock.

Keep foreign objects out of the cabinet

Dropping flammable or metal objects into the cabinet, or spilling liquids near the VTR can result in serious accidents.

In case of trouble

If you notice an unusual sound, smell or smoke, turn off the power immediately, disconnect the power supply and contact your Sony dealer.

Handling Precautions

Location

Do not store or use the VTR under any of the following conditions:

- In excessive heat or cold (permissible temperature range: 5°C to 40°C (41°F to 104°F))
- In direct sunlight or near heaters. Remember that the temperature inside a locked automobile in summer can rise as high as 50°C (122°F).
- In damp or dusty locations
- In locations subject to vibration
- Near strong magnetic fields
- Near televisions or equipment generating strong radio frequency energy

Orientation

The VTR is designed to be operated horizontally. Never operate the VTR vertically or incline it more than 20 degrees.

Protect the VTR from impact

Do not drop the VTR or subject it to severe shocks.

Keep the VTR well ventilated

To prevent the temperature from rising inside the VTR, keep the VTR uncovered and well ventilated while it is operating.

Maintenance

Clean the cabinet and panels by wiping with a soft, dry cloth.

For stubborn stains, moisten the cloth with a small amount of neutral solvent, and finish by wiping with a dry cloth. Do not use alcohol, benzine, thinners or volatile liquids, as these may discolor or damage the cabinet surface.

Transporting

- Remove any cassette from the cassette compartment.
- Protect the VTR from impact by transporting it in its original carton or a protective case.

Moisture condensation

When the VTR is moved directly from a cold place to a warm place, or when the VTR is operated in a location having a high humidity, moisture may condense inside the VTR. If the tape is used under this condition, it may adhere to the head drum or the tape guide, causing damage. To prevent this, the VTR is equipped with a moisture detector. The AUTO OFF lamp lights to indicate that moisture has been detected inside the VTR. When this lamp is lit, cassettes are automatically ejected. If a cassette is inserted, the VTR does not function, even if a function button is pressed.

Note

When the VTR is first moved to a location where condensation is liable to form, we recommend that you wait for about ten minutes for the VTR to warm up and keep the power on so that the moisture detector will operate.

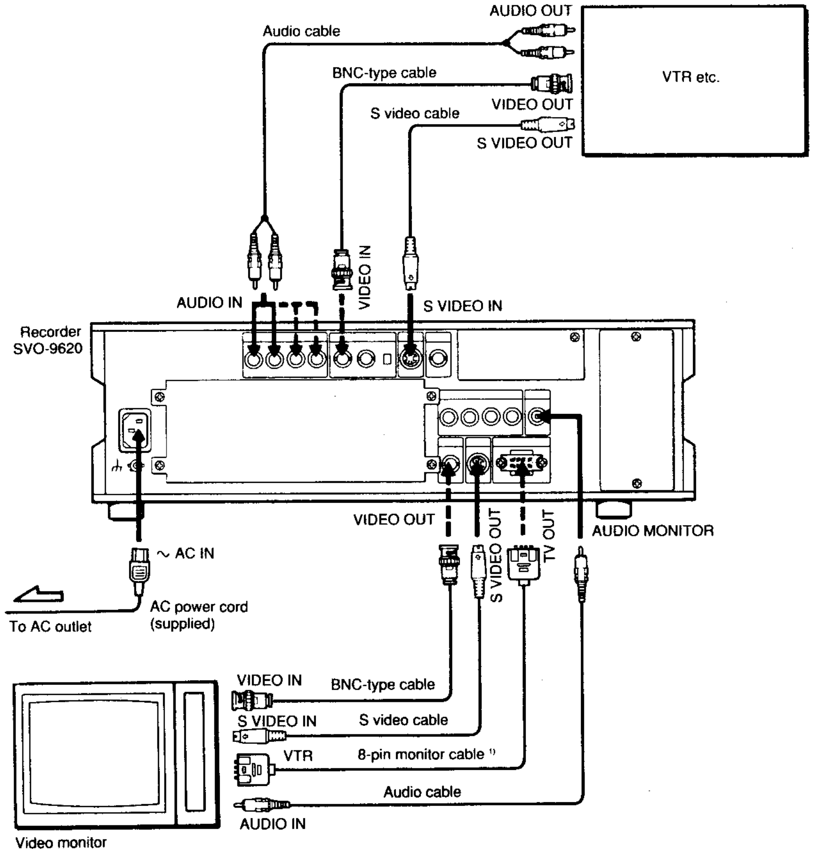
Connections

The following examples illustrate how to connect equipment using this VTR.

- Connecting other video equipment
- Controlling the VTR with a remote control unit

Connecting Other Video Equipment

The following example shows how to make the necessary connections to record video signals output from other video equipment.

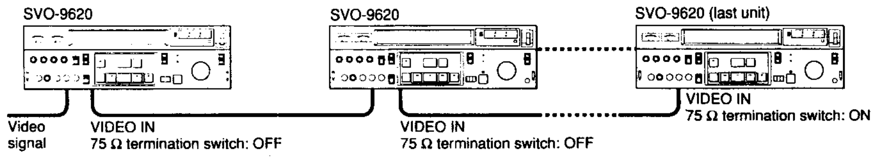

AUDIO OUT
Audio cable
BNC-type cable
VIDEO OUT
S video cable
S VIDEO OUT
VTR etc.
AUDIO IN
VIDEO IN
S VIDEO IN
Recorder
SVO-9620
VIDEO OUT
S VIDEO OUT
TV OUT
AUDIO MONITOR
~ AC IN
AC power cord
(supplied)
To AC outlet
VIDEO IN
BNC-type cable
S VIDEO IN
S video cable
VTR
8-pin monitor cable 1)
Audio cable
AUDIO IN
Video monitor

1) You can input both audio signals and video signals through the single TV OUT connector. Hence, you don't need to use a separate S cable, BNC-type cable, and audio cable.

Connecting other video equipment

Simultaneous recording on two or more SVO-9620 VTRs

Connect the VIDEO IN connectors of each VTR to each other.
The VTR that is used as the bridge termination unit must have its 75 Ω termination switch set to ON.

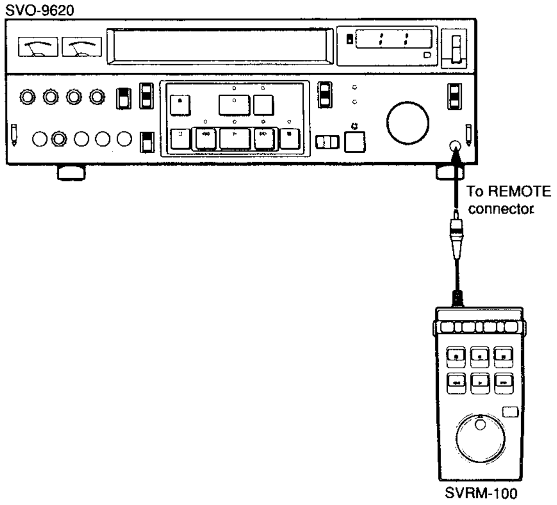

SVO-9620
SVO-9620
SVO-9620 (last unit)
Video signal
VIDEO IN
75 Ω termination switch: OFF
VIDEO IN
75 Ω termination switch: OFF
VIDEO IN
75 Ω termination switch: ON

Bridge connection

Controlling the VTR with a Remote Control Unit

The connections necessary to enable remote control of the VTR with the SVRM-100 remote control unit are as follows. The SVRM-100 can be used to control the VTR to which it is connected. But, the following buttons of SVRM-100 do not function.

- FREEZE button
- INDEX button
- MARK button
- ERASE button


SVO-9620
To REMOTE connector
SVRM-100

Controlling the VTR with a remote control unit

Handling Cassettes

Compatible Cassettes

Use S-VHS or VHS tapes with the VTR. If you use VHS tape, you cannot record a video signal in S-VHS format. In this case, the VTR records and plays back in VHS format on the VHS tape. The type numbers and recording/playback times of the cassettes that can be used with this VTR are listed in the following chart.

S-VHS tape

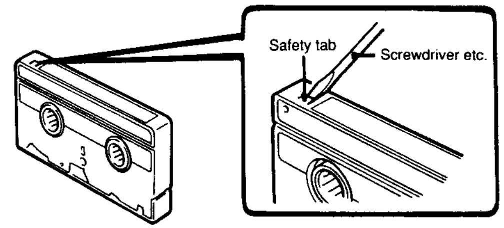
Type number	Recording/playback time (minutes)
MQSE-30	30
MQSE-60	60
MQSE-120	120

VHS tape (High-Grade type)

Type number	Recording/playback time (minutes)
E-30PM	30
E-60PM	60
E-120PM	120

Preventing Accidental Erasure

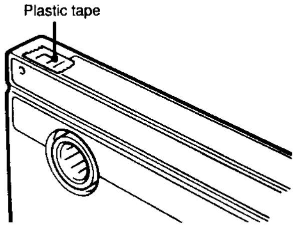
When re-recording on a previously recorded tape, previous recording is automatically erased. To avoid unintentional erasure of recorded signals, break off the safety tab on the cassette. With the tab removed, recording is inhibited.



Preventing accidental erasure

To cancel recording inhibition

Cover the slot left by the safety tab with plastic tape.

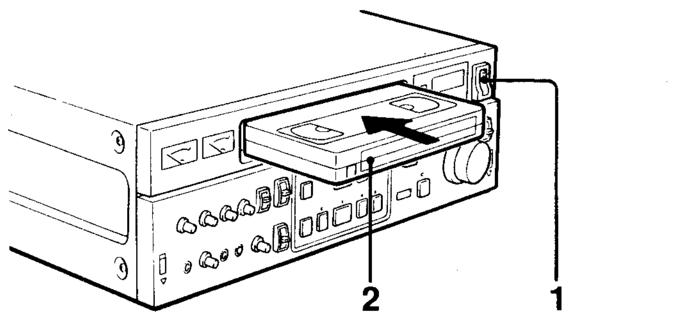


Canceling recording inhibition

Notes on Handling and Storing Cassettes

- Do not store cassettes in locations subject to direct sunlight, high humidity or excessive dust, or near heat sources, air ducts or in magnetic fields.
- After use, rewind the tape onto the supply reel to avoid damage to the tape.
- Store the cassette in its case and keep it vertical position.
- Do not drop a cassette and avoid subjecting it to mechanical shock.

Inserting a Cassette



Inserting a cassette

1 Turn the power on.

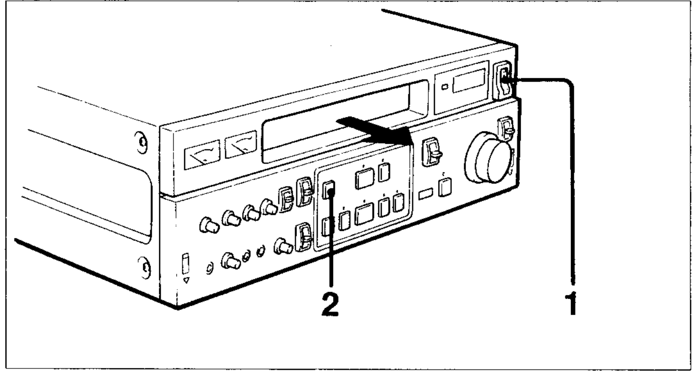
2 Fully insert the cassette into the cassette compartment.

The cassette is automatically pulled into the operating position.

Notes

- Insert the cassette straight into the entrance of the compartment.
- Insert the cassette with its label side up.
- The labels on the cassette should be firmly attached. If they become detached inside the VTR, you may not be able to eject the cassette.

Ejecting a Cassette



Ejecting a cassette

1 Make sure that the power is turned on.

2 Press the EJECT button.

Caution

Do not attempt to eject a cassette while your fingers are in the cassette compartment.

Chapter 4
Recording

This chapter explains recording, how to dub audio signals, timer recording and sensor recording (where the VTR automatically starts recording a signal from a satellite system).

Pre-recording Preparation .... **4-3(E)**
  Selecting the Audio Recording System .... 4-3(E)
  Setting the Operation Mode at Tape End .... 4-7(E)
Recording .... **4-8(E)**
Monitoring the Sound being Recorded .... **4-11(E)**
Dubbing Audio Signal .... **4-12(E)**
Timer Recording .... **4-15(E)**
Sensor Recording .... **4-17(E)**

Pre-recording Preparation

This section explains the necessary preparation prior to recording.

Selecting the Audio Recording System

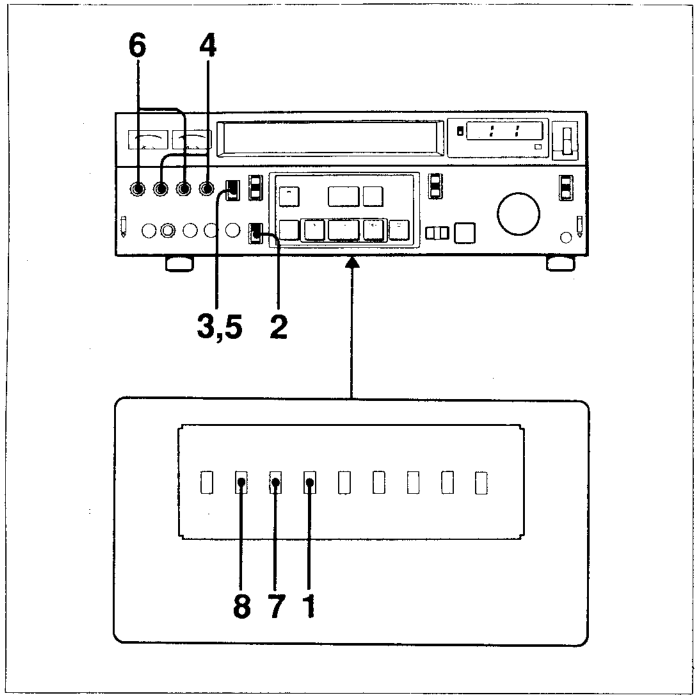
Three audio recording systems are supported for the audio signal input through the AUDIO IN connectors on the rear panel.

- Hi-fi recording: records an input audio signal onto the video track after frequency modulation . This type of recording enables the recording of a wide dynamic range, compared with normal recording.
- Normal recording: records an input audio signal onto the audio track. This type of recording is suitable for recording with a microphone.
- Four-channel recording: records an input audio signal in both the hi-fi and normal recording systems onto each track simultaneously. This type of recording enables the simultaneous recording of four audio signals.

Recording system	Signal to be recorded	Track to be recorded
Hi-fi recording	Signal from the AUDIO IN Hi-Fi connectors	Onto the video track
Normal recording	Signal from the AUDIO IN NORM connectors or the MICROPHONES connector	Onto the audio track
Four-channel recording	Signals from the AUDIO IN Hi-Fi connectors and the AUDIO IN NORM connectors	Onto the video track and audio track

Four-channel recording

To record an audio signal input from the AUDIO IN Hi-Fi connectors using the hi-fi recording system, and simultaneously record an input audio signal from the AUDIO IN NORM connectors in normal recording mode, perform the following steps.



Four-channel recording

1 Set the HiFi REC switch on the sub panel to ON.

2 Set the CH-2 METER switch to AUDIO.

3 Set the MONITOR OUT METER selector to Hi-Fi.

4 Adjust the audio input signal level with the AUDIO LEVEL Hi-Fi controls, while monitoring the AUDIO LEVEL meter.

5 Set the MONITOR OUT METER selector to NORM.

6 Adjust the audio input signal level with the AUDIO LEVEL NORM controls, while monitoring the AUDIO LEVEL meter.

7 If you want to prevent the distortion caused by excessive input when the VTR is recording an audio signal in normal recording mode, set the LIMITER switch to ON.
ON: The limiter circuit is activated, and excessive input signal levels are limited. Such cases could include sudden loud noises when recording with a microphone.
OFF: The limiter circuit is deactivated.

8 To record an audio signal in normal recording mode with the Dolby NR system, set the DOLBY switch on the sub panel to ON.
ON: Sound is recorded with the Dolby NR system.
OFF: Sound is recorded without the Dolby NR system.

Note
Be sure to make the same setting for both recording and playback.

Hi-fi recording operation

To record an audio signal input through the AUDIO IN Hi-Fi connectors on the rear panel in hi-fi recording mode, perform steps 1 to 4 of the procedure explained under "Four-channel recording."

Note

When you need to record in hi-fi recording mode only, do not connect any source to the AUDIO IN NORM connectors on the rear panel. Otherwise, the audio input signal from the AUDIO IN NORM connectors will also be recorded in normal recording mode.

Normal recording operation

To record an audio signal input through the AUDIO IN NORM connectors on the rear panel in normal recording mode, turn the HiFi REC switch on the rear panel to OFF, then perform steps 2 and 5 to 8 of the procedure explained under "Four-channel recording."

You may also record the audio signal input through the MICROPHONES connectors.

To record an audio signal input from a the microphone

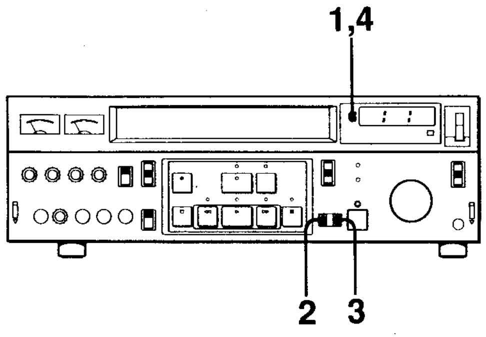
Connecting a microphone to the MICROPHONES connectors on the front panel allows the VTR to record the audio signal input from the microphone. The signal is recorded onto the tracks for both normal and hi-fi audio channel-1 when a microphone is connected to MICROPHONE CH-1. The signal is recorded onto the tracks for both normal and hi-fi audio channel-2 when a microphone is connected to MICROPHONE CH-2. You may also record the signal onto both tracks by connecting a microphone to both connectors. If you connect microphones to the MICROPHONES connectors, any signal being input through the AUDIO IN NORM connectors is not recorded by the VTR.

Setting the Operation Mode at Tape End

This VTR rewinds to the beginning of the tape once the tape has reached its end. This is the factory default setting. You can modify this setting to eject the cassette or simply stop the tape at the tape end. Change the setting as follows.

Note

During timer recording and sensor recording, the VTR does not automatically rewind at tape end even if set to do so.



Setting the operation mode at tape end

1 Set the CTL/MENU switch to MENU.

The menu items that can be set appear in the time counter block.

2 Press the ITEM button repeatedly until "tPE-**" appears.

3 Press the DATA button repeatedly to select the operation mode at tape end.
rE: Automatically rewinds the tape at tape end.
St: Automatically stops the tape at tape end.
Et: Automatically ejects the cassette at tape end.

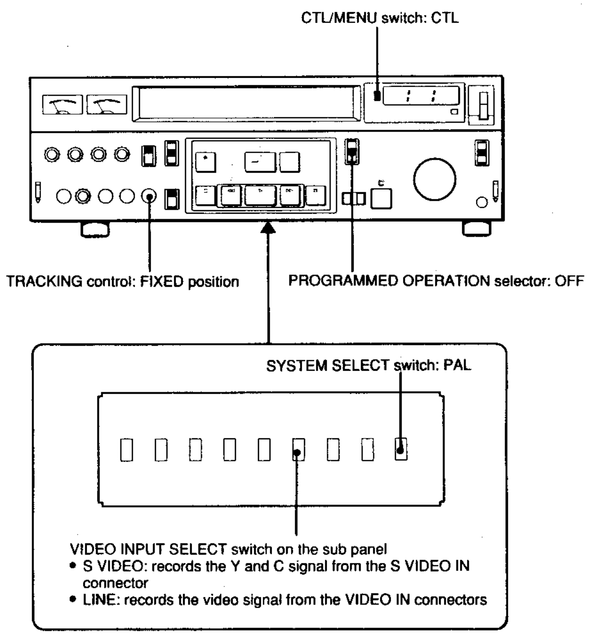
4 Set the CTL/MENU switch to CTL.

The menu item displayed in step 3 is specified.

Recording

Preparation

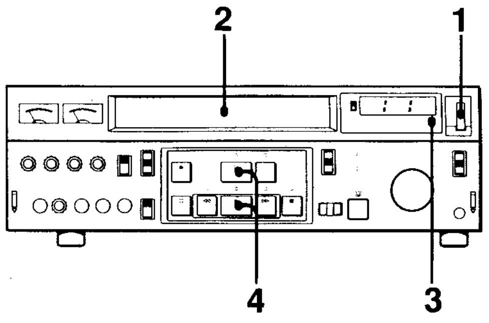
Prior to recording, set the selector, control, and switch as follows.


CTL/MENU switch: CTL
TRACKING control: FIXED position
PROGRAMMED OPERATION selector: OFF
SYSTEM SELECT switch: PAL
VIDEO INPUT SELECT switch on the sub panel
• S VIDEO: records the Y and C signal from the S VIDEO IN connector
• LINE: records the video signal from the VIDEO IN connectors

Setting the selector, control and switch

Recording

Before inserting a cassette into the cassette compartment, check that the safety tab on the cassette is present. If the tab is not present, recording will be inhibited.



Recording operation

1 Set the POWER switch to ON.

2 Insert the cassette into the cassette compartment.

3 Press the RESET button.

The time counter indicates “0:00:00.”

4 Press the PLAY button while holding down the REC button.

Recording begins.

To stop the tape momentarily

Press the PAUSE button.
To resume recording, press the PAUSE button again. You can continue recording smoothly.

This VTR's flying erase head allows a recording to be made immediately after another recording without picture disturbance. Thus, when editing with another VTR, use this VTR for recording and the other VTR for playback.

Notes

- The VTR uses the assemble recording method to record video signals. Assemble recording allows a sequence to be recorded immediately after a previous recording, with no picture disturbance. Some break-up may be noticed at the end point, however.
- The picture may break up at the beginning of the recording when recording onto a previously recorded tape without framing.
- If the pause mode is held for a period greater than the time set with the menu, the VTR automatically enters long pause mode (the tape around the head drum automatically slackens to protect the video head and the tape). Press the pause button again to release long pause mode.
  You can change the long pause time with a menu operation. For details, refer to "Setting the still time" on page 5-5(E).

To stop recording

Press the STOP button.

Note

The built-in AGC circuit automatically adjusts the recording level to the optimum value.

Monitoring the Sound being Recorded

You can monitor the sound being recorded. The sound is output from the HEADPHONES connector, AUDIO MONITOR connector, and TV OUT connectors. Select the sound to be monitored with the MONITOR OUT METER switch and CH-1/MIX/CH-2 selector.

Note

You can not select the signal output from the AUDIO OUT connector by using this switch and selector.

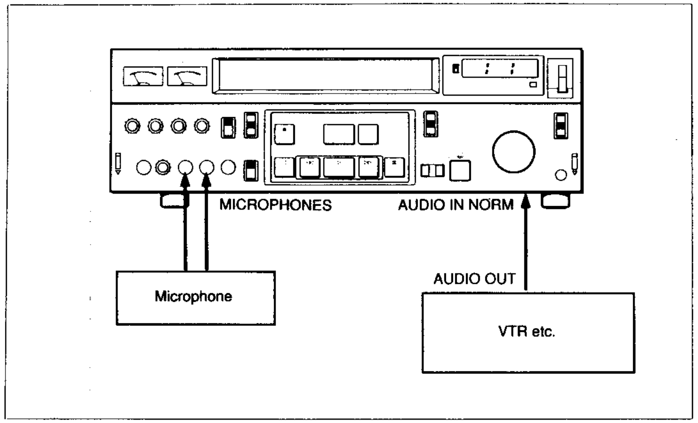
Sound to be monitored	Channel to be monitored	MONITOR OUT METER switch setting	CH-1/MIX/CH-2 selector setting
Hi-fi recording sound	Channel-1	Hi-Fi	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2
Normal recording sound	Channel-1	NORM	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2

Dubbing Audio Signal

You can dub audio signals onto a previously recorded tape. The audio signal is recorded onto the track used for normal recording. You can select which channel is to be recorded: channel-1, channel-2, or channel-1 and channel-2.
For details, refer to "Menu items and their functions" on page A-3(E).

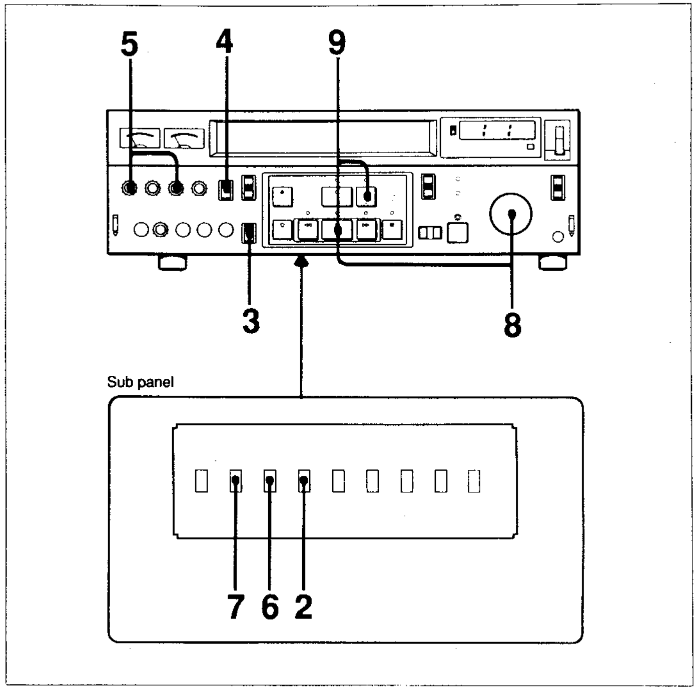
Connection for audio signal dubbing

Input the audio signal to be dubbed through the MICROPHONES connector on the front panel or through the AUDIO IN NORM connector on the rear panel. If a signal is input through both connectors, the signal input through the MICROPHONES CH-1 connector is recorded.



Connection for audio signal dubbing

To dub an audio signal



Audio signal dubbing

1 Select the channel for the dub audio signal.
For details, see "dub" under "Menu items and their functions" on page A-3(E).

2 Set the HiFi REC switch on the sub panel to OFF.

3 Set the CH-2 METER switch to AUDIO.

4 Set the MONITOR OUT METER switch to NORM.

5 Adjust the audio dubbing signal level with the AUDIO LEVEL NORM controls while monitoring the AUDIO LEVEL meter.

6 To prevent the distortion caused by excessive input, set the LIMITER switch on the rear panel to ON.
ON: The limiter circuit is activated.
OFF: The limiter circuit is deactivated.

Dubbing Audio Signal (Continued)

7 To record a signal with the Dolby NR system, set the DOLBY switch on the sub panel.
ON: Record the audio signal with the Dolby NR system.
OFF: Record the audio signal without the Dolby NR system.

Note

Be sure to set to make the same setting for both dubbing and playback.

8 Locate the point from which you want to start dubbing with the PLAY button or shuttle dial *(See page 5-11(E)).*

9 Press the PLAY button while holding down the DUB button.

Audio signal dubbing will start.

To stop the tape momentarily

Press the PAUSE button.
To resume dubbing, press the PAUSE button again.

To stop dubbing

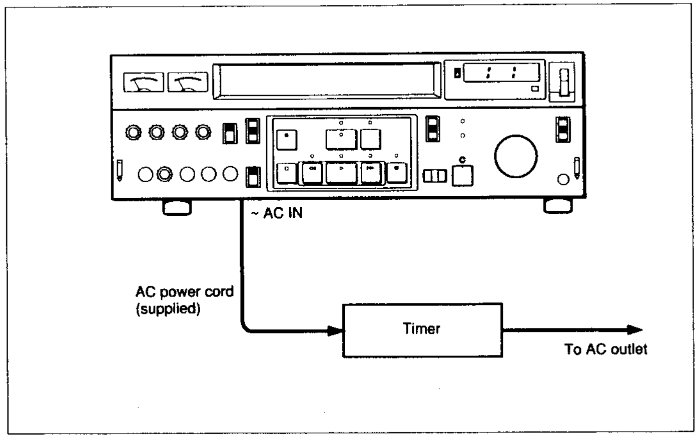
Press the STOP button.

Timer Recording

Using an optional timer, you can automatically start recording at a preset time.

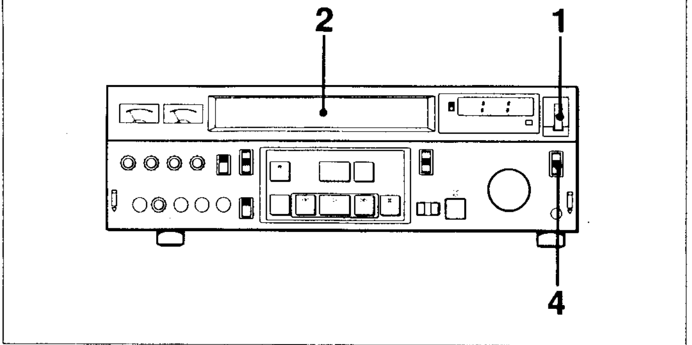
Connecting a timer

Connect a timer to the VTR as follows.



Connecting a timer

Timer recording



Timer recording

1 Set the POWER switch of the VTR to ON.

2 Check that the safety tab on the cassette is present, and insert the cassette into the cassette compartment.

3 Set the times at which you want to start and stop recording.
For details, refer to the operation manual supplied with the timer.

4 Set the TIMER switch to REC.

The timer automatically turns on the VTR power at the preset time. The VTR starts recording.

To stop timer recording
Press the STOP button of the VTR.

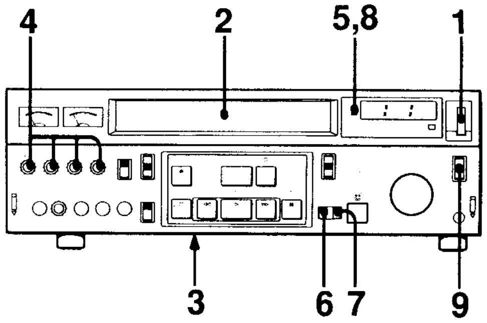
Notes

- To ensure that all of the desired sequence is recorded, set the start time one minute earlier than the time at which you actually want to start recording.
- Once the TIMER switch has been set to REC, all buttons and switches, except for the STOP button, are disabled. Also, immediately after the power is turned on, the STOP button is temporarily disabled.
- After timer recording has been completed, set the TIMER switch to OFF.
- At tape end, the VTR automatically enters the operating mode set with the menu.
For details, refer to "Menu items and their functions" on page A-3(E).
- At the recording stop time, the timer turns off the VTR power with the tape wound around the head drum. At the next recording start time, the timer automatically turns on the power of the VTR. At this time, the tape stops momentarily, then timer recording starts.

Sensor Recording

By setting from the menu, the VTR can automatically records signals whenever a video signal is input through the VIDEO IN or S VIDEO IN connectors. You can thus automatically record signals, for example, from satellite system.

Sensor recording operation



Sensor recording operation

1 Set the POWER switch of the VTR to ON.

2 Check that the safety tab on the cassette is present, then insert the cassette into the cassette compartment.

3 Select the video signal to be recorded with the VIDEO INPUT SELECT switch on the sub panel.
S-VIDEO: records the Y and C signal input throuth the S VIDEO IN connector.
LINE: records the video signal input through the VIDEO IN connector.

4 Select the audio recording signal and adjust the signal level with AUDIO LEVEL controls.
For details, refer to " Selecting the Audio Recording System" on page 4-3(E).

5 Set the CTL/MENU switch to MENU.
The menu items appear on the time counter block.

6 Press the ITEM button repeatedly until "SEn-**" appears.

7 Press the DATA button repeatedly until "SEn-On" appears.

8 Set the CTL/MENU switch to CTL.

9 Set the TIMER switch to REC.

The SENSOR REC lamp on the indicator block will light and the VTR automatically enters standby mode for sensor recording.
When a video signal is input through the rear panel connectors set in step 3, the VTR automatically starts recording.
When the video signal is no longer input, the VTR automatically stops recording and returns to the standby mode for sensor recording. The SENSOR REC lamp on the indicator block remains lit.

To stop sensor recording

Press the STOP button.

Notes

- During sensor recording all the tape transport controls, except the STOP button, are disabled. Also, immediately after the power is turned on, the STOP button is temporarily disabled.
- After sensor recording has been completed, set the TIMER switch to OFF.
- At the tape end, the VTR automatically enters the operating mode set with the menu. For example, if "tPE-Et" has been set, the VTR automatically ejects the cassette at tape end.
- The VTR cannot enter the sensor recording mode and the SENSOR REC lamp flashes in the following cases:
  - When no cassette is inserted
  - When you insert a cassette from which the safety tab has been removed
  - When you insert a cassette in which the tape is already at tape end

Chapter 5
Playback

This chapter explains playback, how to locate a desired point, how to repeat playback of a portion, and timer playback.

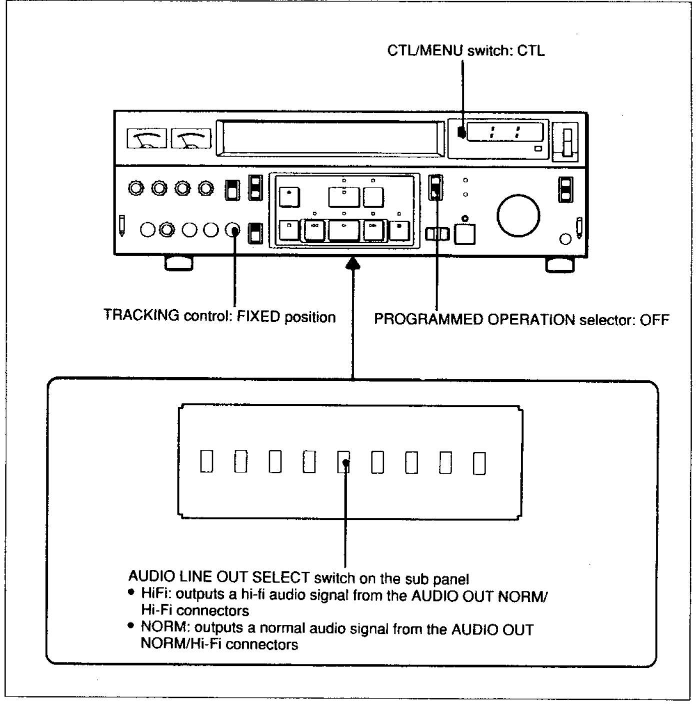
Pre-playback Preparation .... 5-3(E)
  Pre-playback Setting .... 5-3(E)
  Setting the Still Time .... 5-5(E)
Playback .... 5-6(E)
Repeated Playback of a Desired Portion .... 5-8(E)
Locating a Desired Point .... 5-11(E)
Timer Playback .... 5-14(E)

Pre-playback Preparation

Pre-playback Setting

Checking the switch settings

To prepare for playback, set the selector, control, and switch as follows.


CTL/MENU switch: CTL
TRACKING control: FIXED position
PROGRAMMED OPERATION selector: OFF
AUDIO LINE OUT SELECT switch on the sub panel
• HiFi: outputs a hi-fi audio signal from the AUDIO OUT NORM/Hi-Fi connectors
• NORM: outputs a normal audio signal from the AUDIO OUT NORM/Hi-Fi connectors

Setting the selector, control and switch

Selecting the audio signal to be monitored

You can monitor the sound. The sound is output from the HEADPHONES connector, AUDIO MONITOR connector, and TV OUT connector. Select the sound to be monitored with the MONITOR OUT METER switch and the CH-1/MIX/CH-2 selector. If you set the CH-1/MIX/CH-2 selector to MIX, stereo sound is output from the HEADPHONES connector and mixed sound for channel-1 and channel-2 is output from AUDIO MONITOR connector.

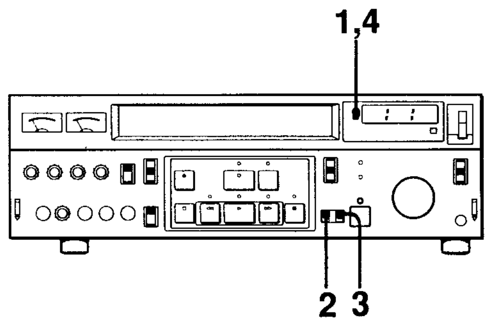
Note

You can not select which signal is output from the AUDIO OUT connector.

Sound to be monitored	Channel to be monitored	MONITOR OUT METER switch setting	CH-1/MIX/CH-2 selector setting
Hi-fi recording sound	Channel-1	Hi-Fi	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2
Normal recording sound	Channel-1	NORM	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2

Setting the Still Time

If the pause mode is held for more than about 5 minutes, the tape around the head drum automatically slackens to protect the video head and the tape (factory setting). This is called "long pause mode." You can set the still time from the menu. Change the time as follows.



Setting the still time

1 Set the CTL/MENU switch to MENU.

The settable menu items appear on the time counter block.

2 Press the ITEM button repeatedly until "Stt-**" appears.

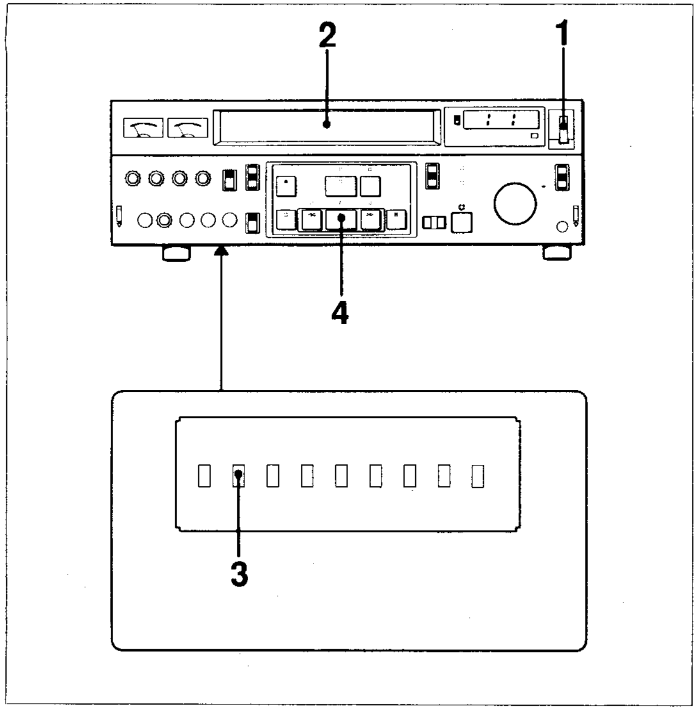
3 Press the DATA button repeatedly to display the desired still time.

Display	Still time
Stt-5	5 minutes
Stt-1	1 minute
Stt-10	10 seconds
Stt- 2	2 seconds

4 Set the CTL/MENU switch to CTL.

The long pause time item displayed in step 3 is set.

Playback



Playback

1 Set the POWER switch to ON.

2 Insert a cassette into the cassette compartment.

3 To play back the audio signal that has been recorded on the audio track using the Dolby NR system, set the DOLBY switch on the sub panel.
ON: plays back the audio signal with the Dolby NR system.
OFF: plays back the audio signal without the Dolby NR system.

4 Press the PLAY button.

The VTR starts playing back.
At tape end, the VTR automatically rewinds the tape then stops.

To stop the tape momentarily

Press the PAUSE button.
The tape stops and the video monitor displays a still picture.
To resume playback, press the PAUSE button again.

Note

If the tape is paused for longer than the time set from the menu, the still picture disappears from the monitor and the VTR enters long pause mode. To release long pause mode, press the PAUSE button again. The VTR immediately resumes playback.

To stop playback

Press the STOP button.

If snow or streaks appear on the picture

If the VTR is used to play back a signal recorded with another VTR, noise, snow or streaks may appear because of a tracking error. To overcome this, set the CH-2 METER switch to TRACKING, and slowly turn the TRACKING control until the maximum level, as indicated by the CH-2/TRACKING level meter, is obtained.

Note

After playing back this tape, reset the TRACKING control to FIXED.

To play back signals recorded in the NTSC color system

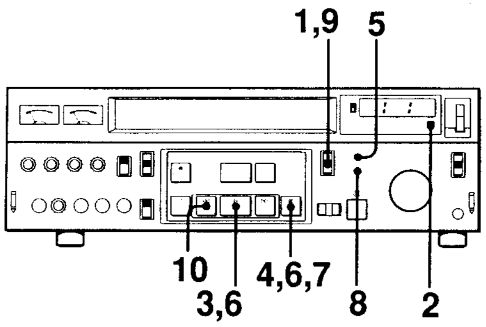
Set the SYSTEM SELECT switch on the sub panel to NTSC 4.43.
The NTSC-recorded signals are played back based on the NTSC$_{4.43}$ system.
To monitor the signal, use a monitor which can display signals of multiple color systems.

Repeated Playback of a Desired Portion

You can repeatedly play back a desired portion using the MARK IN A and B buttons and the PROGRAMMED OPERATION selector.

Three types of repeat playback are supported:
- Repeat playback of a desired portion
- Repeat playback between the beginning of the tape and a particular point
- Repeat playback between a particular point and the tape end

Repeat playback of a desired portion



Repeat playback of a desired portion

1 Set the PROGRAMMED OPERATION selector to OFF.

2 Press the RESET button.

The memorized points are erased.

3 Press the PLAY button.

The VTR starts playing back.

To repeat the portion between the beginning of the tape and a particular point, go to step 7.

4 Press the PAUSE button at the point where you want playback to start. To locate the desired point precisely, use the shuttle dial.
For details, see " Locating a desired point" on page 5-11(E).

5 Press the MARK IN A button.

The VTR memorizes the repeat start point (point A).

6 Press the PLAY button or PAUSE button.

The tape restarts playback.

To repeat the portion between a particular point and the tape end, go to step 9.

7 Press the PAUSE button at the point where you want to playback to stop. To locate the desired point precisely, use the shuttle dial.
For details, see "Locating a desired point" on page 5-11(E).

8 Press the MARK IN B button.

The VTR memorizes the repeat stopping point (point B).

9 Set the PROGRAMMED OPERATION selector to ⟲.

10 Press the REW button.

The VTR rewinds the tape and starts repeat playback.

To stop repeat playback
Press the STOP button.

After finishing repeat playback
Reset the PROGRAMMED OPERATION selector to OFF.

To check memorized points A and B

1 Press the STOP button.

2 Set the PROGRAMMED OPERATION selector to ⟲.

3 Press the MARK IN A or MARK IN B button.

Each memorized point will appear on the time counter while the respective button is held down.

To check the time between two particular points specified for repeat playback

1. Press the STOP button.
2. Set the PROGRAMMED OPERATION selector to ⤺.
3. Press the MARK IN A and MARK IN B buttons simultaneously.

   The time between the specified points will appear on the time counter while the buttons are held down.

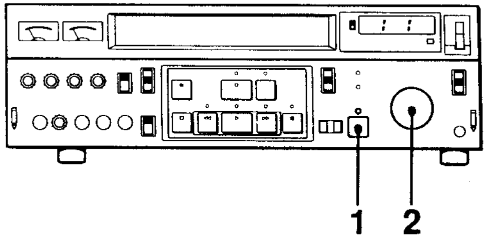
Notes

- When the RESET button is pressed while the PROGRAMMED OPERATION selector is set to OFF or ⤺, data is erased from memory and "0:00:00" is set for both buttons.
- The most recently set values for the MARK IN A and B buttons, as well as the most recently set time counter value are maintained, even if the power is turned off. If, however, you perform a memorizing operation and turn off the power within 15 seconds of the power being turned on, the newly registered data will be lost.
- You can memorize only one point for each MARK IN A or B button. If the button is pressed several times, only the last point will be memorized.

Locating a Desired Point

There are two ways of locating a desired point:
- To locate a desired point using the shuttle dial
- To quickly return to a desired point

To locate a desired point using the shuttle dial



To locate a desired point using the shuttle dial

1. Press the SEARCH button.

   The monitor displays a still picture.

2. Turn the shuttle dial:
   FORWARD(clockwise): to play back in the normal direction.
   REVERSE(counterclockwise): to play back in the reverse direction.

   The playback speed can be varied between ±1/20 and ±10 times normal speed, according to the angle of rotation of the dial. The monitor displays a still picture while the dial is set to the center position.

To stop a search operation

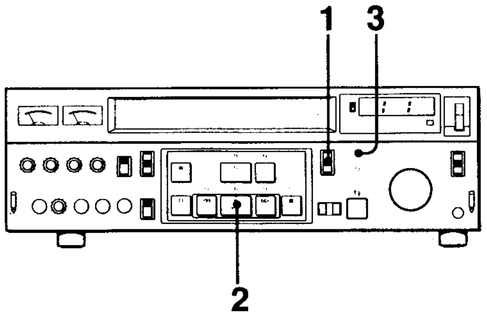
Press STOP or one of the other tape transport buttons.

To resume playback

Press the PLAY button.

To quickly return to a desired point

To memorize a desired point



To memorize a desired point

1 Set the PROGRAMMED OPERATION selector to OFF.

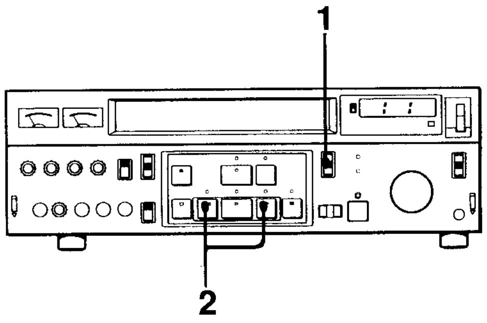
2 Press the PLAY button.

The VTR starts playing back.

3 Press the MARK IN A button at the point to which you want to rewind.

The VTR memorizes the point (point A).

To quickly return to a desired point



To quickly return to a desired point

1 Set the PROGRAMMED OPERATION selector to →↑←.

2 **When the desired point is prior to the current tape position,** press the REW button or turn the shuttle dial counterclockwise (REVERSE).
When the desired point is subsequent to the current tape position, turn the shuttle dial clockwise (FORWARD).

The VTR starts searching for the point memorized for the MARK IN A button.

To resume playback

Return the PROGRAMMED OPERATION selector to OFF.

To check the desired point

1 Press the STOP button.

2 Set the PROGRAMMED OPERATION selector to ↻.

3 Press the MARK IN A button.

The memorized point appears on the time counter while the button is held down.

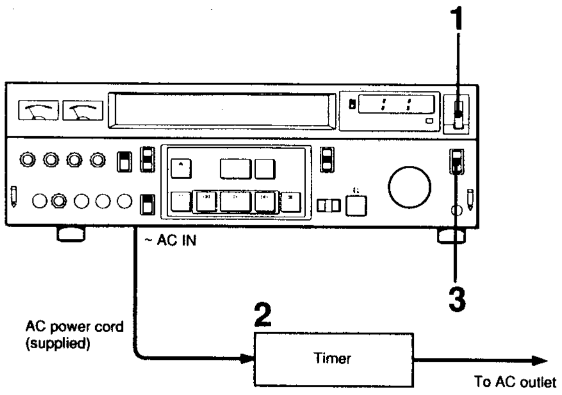
Notes

- If the button is pressed several times, only the last point will be memorized. When the RESET button is pressed with the PROGRAMMED OPERATION selector set to OFF or →↑←, all data is erased from memory and "0:00:00" is set for both buttons.
- The most recently set values for the MARK IN A and B buttons and the most recent time counter value are held in memory even if the power is turned off. If, however, you perform a memorizing operation and turn off the power within 15 seconds of the power being turned on, the newly registered data will be lost.
- You can memorize only one point for each MARK IN A or B button.

Timer Playback

Using an optional timer, you can automatically start playback at a preset time.

Timer playback



Timer playback

1 Set the POWER switch of the VTR to ON.

2 Set the playback start and stop times with the timer.
For details, refer to the operation manual provided with the timer.

3 Set the TIMER switch to PLAY.

The timer automatically turns on the VTR power at the playback start time.

To stop playback during timer playback

Press the STOP button of the VTR.

Notes

- The VTR automatically rewinds the tape then stops. If, however, you set repeat playback between a particular point and the tape end, the VTR automatically rewinds the tape, enters repeat playback mode and starts playback repeatedly upon reaching the tape end.
- When the playback stop time is reached, the timer turns off the VTR power with the tape wound around the head drum. At the next playback start time, the timer again automatically turns on the VTR power. The tape stops momentarily, then timer playback starts.

Chapter 6
Maintenance

This chapter explains troubleshooting, error messages and their meanings, and cleaning the video heads.

Troubleshooting .... 6-3(E)
Error Messages and Their Meanings .... 6-4(E)
Cleaning the Video Heads .... 6-5(E)

Troubleshooting

Should you have a problem with your VTR, first check the three items in Check list 1 and then the appropriate items from Check list 2 or Check list 3.

CHECK LIST 1

- Check that the AC power cord is firmly connected. *(See page 2-12(E).)*
- Check that the POWER switch is set to ON. *(See page 2-5(E).)*
- Check the connections. *(See pages 3-5(E) to 3-7(E).)*

CHECK LIST 2

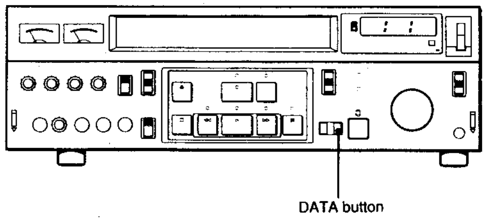
Symptoms	Possible causes and corrective actions	Reference page
AUTO OFF lamp lights and function buttons do not function.	Moisture has condensed inside the VTR. Keep the power on and wait until the lamp goes off. (This indicates that the moisture has evaporated.)	3-4(E)
The tape stops suddenly and no operation button functions.	Eject the cassette and take up the leader tape manually.	3-11(E)
The cassette cannot be ejected.	Turn off the VTR and consult your Sony dealer.	3-11(E)

CHECK LIST 3

Symptoms	Possible causes and corrective actions	Reference page
A cassette cannot be inserted.	Insert the cassette correctly. Check whether another cassette has already been inserted. Check whether the AUTO OFF lamp is lit.	3-10(E)
The tape transport does not operate when any of the operation buttons is pressed. Recording cannot be performed.	Check that the REC lamp is lit. Check that the safety tab of the cassette is present. Check that the PROGRAMMED OPERATION selector is set to OFF.	3-9(E)
Snow or streaks appear on the playback picture.	Set the TRACKING control to the FIXED position. Clean the video head. Check that the EDIT switch is set to OFF.	2-4(E) 2-10(E) 6-5(E)
The playback picture does not appear.	Check that the setting of the SYSTEM SELECT switch is correct. Check that the video monitor conforms to the color system of the tape being played back.	2-10(E)

Error Messages and Their Meanings

The SVO-9620 features self-diagnostics. When a problem is detected, an error message appears in the time counter block on the front panel. The error messages that may appear are explained.



Note

If an error message appears, turn off the power and contact your Sony dealer.

Error code	Sub error code	Meaning
Err-01	—	Reel motor clockwise rotation error
Err-02	—	Tape slack
Err-03	—	Capstan motor error
Err-04	—	Drum motor error
Err-05	06 07 09 0A	Abnormal reel rotation
Err-20	02 03 05 06 30	Loading error Unloading error Cassette compartment error Reel motor error Servo lock error
Err-22	—	Interface I/O error
Err-23	—	Tape transport error
Err-30	—	Sensor error
Err-31	—	Sensor error
Err-32	—	Sensor error
Err-90	01 02 00	Tape transport error

Cleaning the Video Heads

Cleaning the video heads

If the picture temporarily disappears or if snow or noise appears on the picture, the video heads may be contaminated and should be cleaned. Use the optional T-25CL cleaning cassette to perform cleaning as follows. *For details, refer to the operation manual supplied with the cleaning cassette.*

1. Remove the cassette being played.
2. Insert the cleaning cassette.
3. Press the PLAY button.
4. Let the cleaning cassette run for about 10 seconds. Then press the STOP button.
5. Press the EJECT button to remove the cleaning cassette.

Notes

- Remove the cleaning cassette immediately to prevent damage to the video head.
- Do not use the cleaning cassette for more than 10 seconds at a time. Excessive use of the cleaning cassette will shorten the life of the heads.
- Do not rewind the cleaning cassette every time it is used. Run the tape to its end, then rewind it.
- You can run through a cleaning cassette four or five times. If used more than five times, the cleaning effect will lessen.
- Do not use a commercially available wet type cleaning cassette. Wet cleaners may damage the video heads.

Replacing the video heads

If picture quality is still inadequate after cleaning, the video heads may require replacement. The life of the heads is approximately 500 to 1000 hours of use. With this VTR, the accumulated operation time of the heads can be checked as follows.

1. Set the PROGRAMMED OPERATION selector to ↺.
2. Hold down the RESET button for about two seconds.

   The total accumulated operation time of the head drum appears on the counter in units of hours.

Note

For head replacement, consult your Sony dealer.

Appendixes

Menu Items and Their Functions ....A-3(E)
Specifications..A-5(E)
Glossary ....A-9(E)

Menu Items and Their Functions

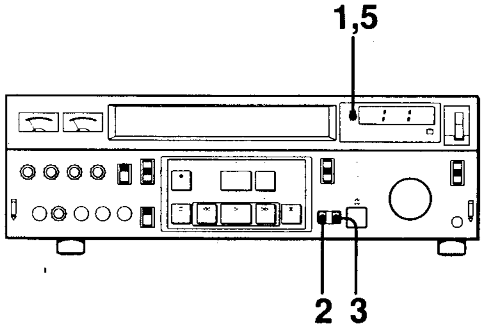
Summary of menu items and their functions

The VTR features the following nine menu items. The boxed numbers in the Display column are the factory settings.

Item	Display	Set data
Sensor recording ON/OFF	SEn $\boxed{\text{-ON}}$ -OF	**On:** Sensor recording mode is possible. (Valid only when the TIMER switch is set to REC.) **OF:** Sensor recording mode is not possible.
Tape end operation mode	tPE $\boxed{\text{-rE}}$ -St -Et	**rE:** Automatically rewinds the tape at tape end. (During timer recording or sensor recording, however, the tape is not rewound.) **St:** Automatically stops the tape at tape end. **Et:** Automatically ejects the cassette at tape end.
S-VHS recording selection	SvH $\boxed{\text{-At}}$ -OF	**At:** Automatically sets S-VHS recording when an S-VHS tape is loaded, and VHS recording when a VHS tape is loaded. **OF:** Automatically sets VHS recording when eithr an S-VHS tape or VHS tape are inserted.
Channel selection for dubbing	dUb $\boxed{\text{-C1}}$ -C2 -12	**C1:** To dub onto the channel-1 track for normal recording. **C2:** To dub onto the channel-2 track for normal recording. **12:** To dub onto the channel-1 and channel-2 tracks for normal recording.
Still time	Stt $\boxed{\text{-5}}$ -1 -10 - 2	This item determines long pause mode time. **5:** 5 minutes **1:** 1 minute **10:** 10 seconds **2:** 2 seconds
Digital NR ON/OFF (Valid only when the SVBK-150 is installed in the SVO-9620)	dnr $\boxed{\text{-On}}$ -OF	**On:** Activates the digital noise reducer. **OF:** Deactivates the digital noise reducer.
Digital CNR ON/OFF (Valid only when the SVBK-150 is installed in the SVO-9620, and the "dnr-On" setting is made.)	Cnr $\boxed{\text{-On}}$ -OF	**On:** Activates the digital chroma noise reducer. **OF:** Deactivates the digital chroma noise reducer.
Digital YNR ON/OFF (Valid only when the SVBK-150 is installed in the SVO-9620, and the "dnr-On" setting is made.)	Ynr $\boxed{\text{-On}}$ -OF	**On:** Activates the digital luminance noise reducer. **OF:** Deactivates the digital luminance noise reducer.

Setting menu operation

To change the operation mode of the VTR, use the menu as follows.



Setting menu operation

1. Set the CTL/MENU switch to MENU.

   The items which can be set appear on the time counter block.
2. Press the ITEM button to select the item to be set.
3. Press the DATA button to set the data for the selected item.
4. Repeat steps 2 and 3 as necessary.
5. Set the CTL/MENU switch to CTL.

   The data specified in steps 2 and 3 is set.

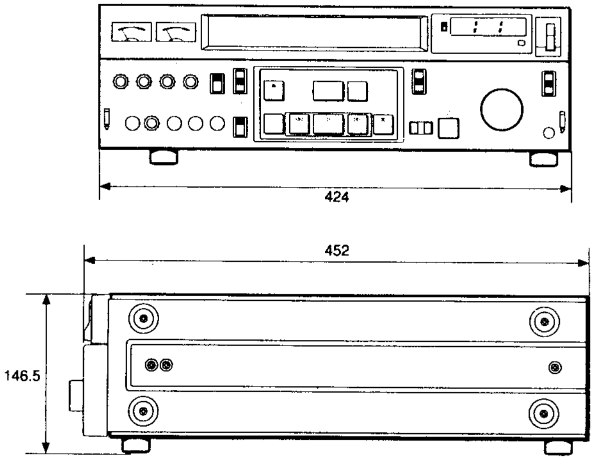
Note

If you set menu operation and turn off the power within 15 seconds of the power being turned on, however, the newly registered data will be lost.

Specifications

General

Power requirements	220 to 240 V AC, 50/60Hz
Power consumption	49 W
Operating orientation	Horizontal
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	424 x 146.5 x 452 mm (w/h/d) (16 $^{3}/_{4}$ x 5 $^{7}/_{8}$ x 17 $^{7}/_{8}$ inches) Excluding projecting parts and controls



unit:mm

Weight	Approx. 14 kg (30 lb 14 oz)

System

Signal system	PAL color signal, CCIR standard/NTSC$_{4.43}$ color signal, EIA standard
Recording system	Rotary 2-head azimuth recording, VHS format
Luminance	FM recording
Color recording system	Converted subcarrier direct recording

Specifications (Continued)

Tape transport

Tape speed	23.39 mm/sec.
Recording and playback time	Approx. 120 minutes (E-120 cassette)
Fast forward and rewind time	Within 2.5 minutes (E-120 cassette)
Tapes	VHS or S-VHS tapes
Search	Still, 1/20 to 10 times normal speed in both forward and reverse directions

Video

Inputs	VIDEO IN (BNC type) × 2 for bridge connection Composite video signal: $1.0^{+1.0}_{-0.5}$ Vp-p, 75 Ω, unbalanced, sync negative S VIDEO IN (4-pin mini DIN) × 1 Luminance signal: 1.0Vp-p, 75 Ω, unbalanced Color signal: 0.3Vp-p, burst,75 Ω, unbalanced
Outputs	VIDEO OUT (BNC type) × 1 Composite video signal: 1.0 ±0.2 Vp-p, 75 Ω, unbalanced, sync negative S VIDEO OUT (4-pin mini DIN) × 1 Luminance signal: 1.0 Vp-p, 75 Ω, unbalanced Color signal: 0.3 Vp-p, burst, 75 Ω, unbalanced TV OUT (8-pin multi) × 1 Composite signal: 1.0Vp-p, 75 Ω, sync negative
Horizontal resolution	More than 240 TV lines (VHS) More than 400 TV lines (S-VHS)
S/N	45 dB(color) (VHS)
Recording level control	Automatic

Audio

Inputs	AUDIO IN NORM CH-1/L, CH-2/R (phono jack) × 1 each –6dBs, 47 kΩ, unbalanced AUDIO IN Hi-Fi CH-1/L, CH-2/R (phono jack) × 1 each –6dBs, 47 kΩ, unbalanced MICROPHONES CH-1, CH-2 (phone jack) × 1 each –60dBs, 3 kΩ, unbalanced
Outputs	AUDIO OUT NORM/Hi-Fi CH-1/L, CH-2/R (phono jack) × 1 each –6 dBs (47 kΩ load), unbalanced AUDIO OUT Hi-Fi CH-1/L, CH-2/R (phono jack) × 1 each –6 dBs (47 kΩ load), unbalanced MONITOR OUT(phono jack) × 1 –5 dBs (47 kΩ load), unbalanced TV OUT (8-pin multi) × 1 –5 dBs (47 kΩ load), unbalanced HEADPHONES (stereo phone jack) × 1 –18 dBs to –48 dBs (8 Ω load), unbalanced
Tracks	4 tracks (Hifi:2, Normal:2)
S/N	43 dB (normal audio at 3% distortion) (Dolby off)
Frequency response	50 to 12,000 Hz(normal audio) 20 to 20,000 Hz(hi-fi audio)
Dynamic range	More than 90 dB(hi-fi audio)
Recording level control	Manual or limiter system selectable

Synchronism

Input	SYNC IN (BNC type) × 1 0.3 to 4Vp-p, 75 Ω, unbalanced, sync negative

---

0dBs=0.775V

Supplied accessories

AC power cord(1)
Operating instructions(1)

Optional accessories

SVRM-100 Remote control unit
SVBK-100 33-pin interface board
SVBK-120 RS-232C interface board
SVBK-130 Satellite interface board (Available soon)
SVBK-140 RS-422A interface board
SVBK-150 Digital noise reduction board
SVBK-160 Time code board
RM-450CE Editing control unit
YC-30V/15V/10V S video cable
SYC-2/5 S video cable (With locking rings)
RK-C74 Audio cable
RMM-980 Rack mount kit

Design and specifications are subject to change without notice.

Glossary

AGC
Abbreviation for automatic gain control. In this VTR, the video input signal is automatically raised or lowered.

Assemble recording
A recording technique where sequences are recorded, one after another. The user need only determine the recording start point on the previously record segment. The VTR achieves continuity.

Bridge connection
A method of connection where a signal is input and output through a unit that is connected to another unit. Also called loop through.

Chrominance signal
The signal that carries information about hue and color. Also called the C signal.

Composite video signal
A signal that consists of video, sync , and color burst signals.

CTL signal
Abbreviation for control signal. In VTRs, regular pulses are used to synchronize the tape travel and the scanning position of the video heads. These are recorded on a special track so that the video heads can scan the playback tape accurately.

Dubbing
An audio signal recording technique that allows a signal to be inserted at any point on a recorded tape.

Framing
A picture is constituted from 30 frames (0 to 29) in one second. One frame consists of two fields. Setting the frame value to an odd number for the first, third,...frame and to an even number for the second, fourth, ...frame is called (Y signal) framing.

Jitter
Small, rapid aberrations in the horizontal or vertical size that may appear on a display because of phase deviations in the synchronized signal. This may be caused by noise or inconstant tape transport or head drum rotation when the VTR is recording or playing back.

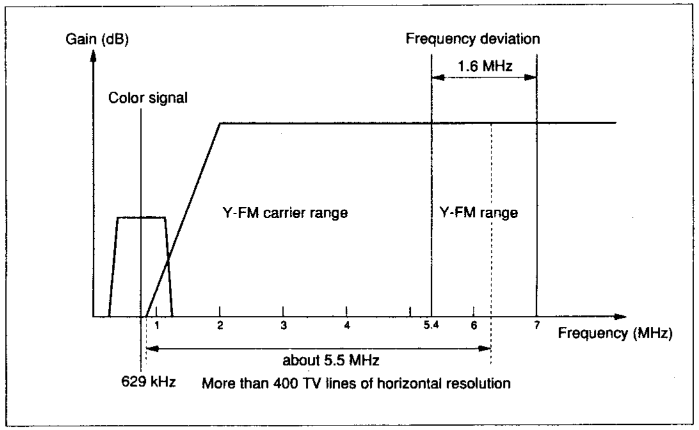
Luminance signal
The signal that determines the brightness of the picture.

S video signal

Separated video signals: Y(luminance) signal and C(chrominance) signal. Separating the video signals results in less deterioration, compared with the composite video signal mixed Y and C signal.

S-VHS format

S-VHS is a newly developed format that provides high resolution and high picture quality (more than 400 TV lines of horizontal resolution). This is made possible by the S-VHS video signal recording/playback circuit and high-quality S-VHS tape. The VTR cannot record/play back ordinary VHS tapes in the S-VHS format.



S-VHS format

Sync signal

A reference signal consisting of vertical and horizontal sync signals and used to synchronize the time codes. Also called the composite sync signal.

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SECTION 2
SERVICE INFORMATION

2-1. CABINET REMOVAL AND INSTALLATION

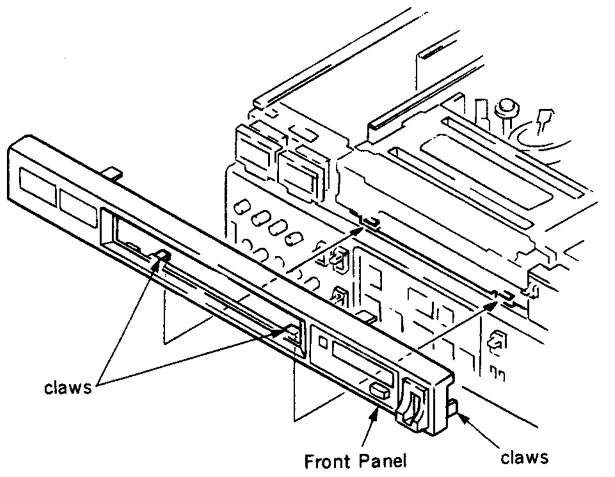
Front panel

Removal

1. Remove the top panel and the right and left panels.
2. Remove two screws at right and left and two screws on the top.
3. Remove the front panel disengaging it from the projections of the chassis.

Installation

1. Align the claws of the front panel to the holes of the chassis, then install the front panel.


claws
Front Panel
claws

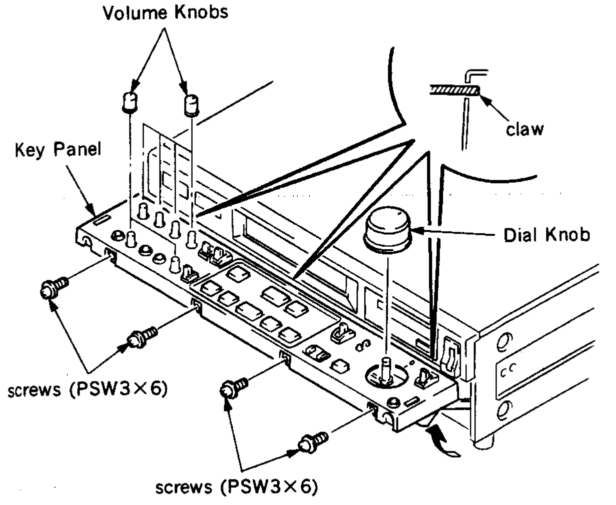
Key panel

Removal

1. Remove the dial knob and volume knobs.
2. Put the slide switch perpendicularly to the surface of the key panel.
3. Open the key panel at 90 degrees angle and remove four screws. (Refer to Sec.2-5 Position Adjustment of key panel)
4. Reverse the key panel at 30 degrees angle, and remove the key panel disengaging it from the projections.

Installation

1. Align the holes on the chassis with three claws on the key panel, then put the key panel taking care of the slide switch.
2. Open the key panel at 90 degrees angle, and fix the four screws.
3. Close the key panel, and install the dial knob and volume knobs.


Volume Knobs
Key Panel
claw
Dial Knob
screws (PSW3×6)
screws (PSW3×6)

Side panel

Removal

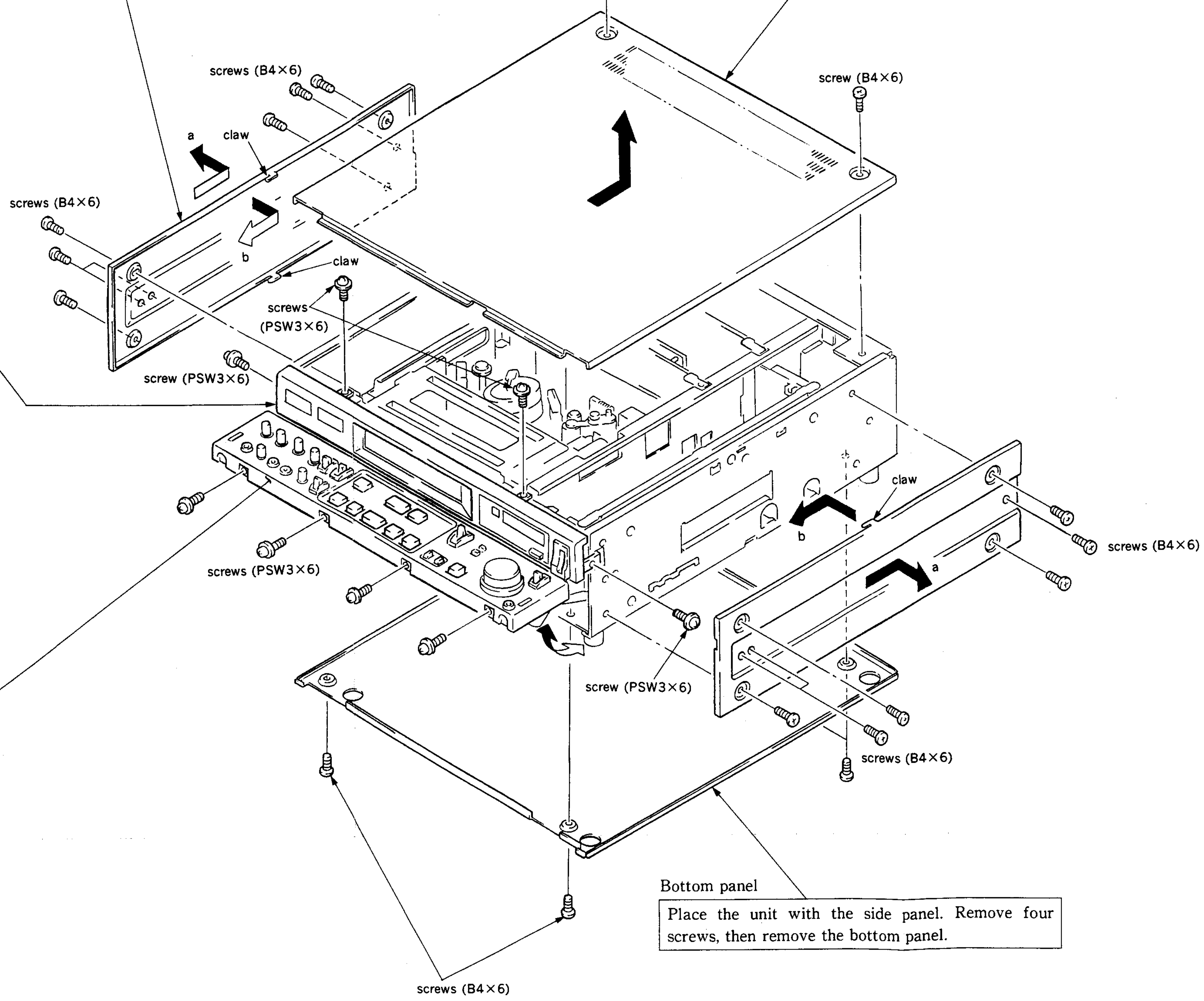
1. Remove seven screws. Move the side panel in the direction of arrow a, then remove the side panel.

Installation

1. Insert the upper and lower claws into the holes of the chassis, and move the side panel in the direction arrow b.
2. Install the side panel with seven screws.

Top panel

Remove two screws. Move the top panel in the direction of arrow, then remove the top panel.


screw (B4×6)
screws (B4×6)
a
claw
screw (B4×6)
screws (B4×6)
b
claw
screws (PSW3×6)
screw (PSW3×6)
claw
b
screws (B4×6)
a
screws (PSW3×6)
screw (PSW3×6)
screws (B4×6)
screws (B4×6)

Bottom panel

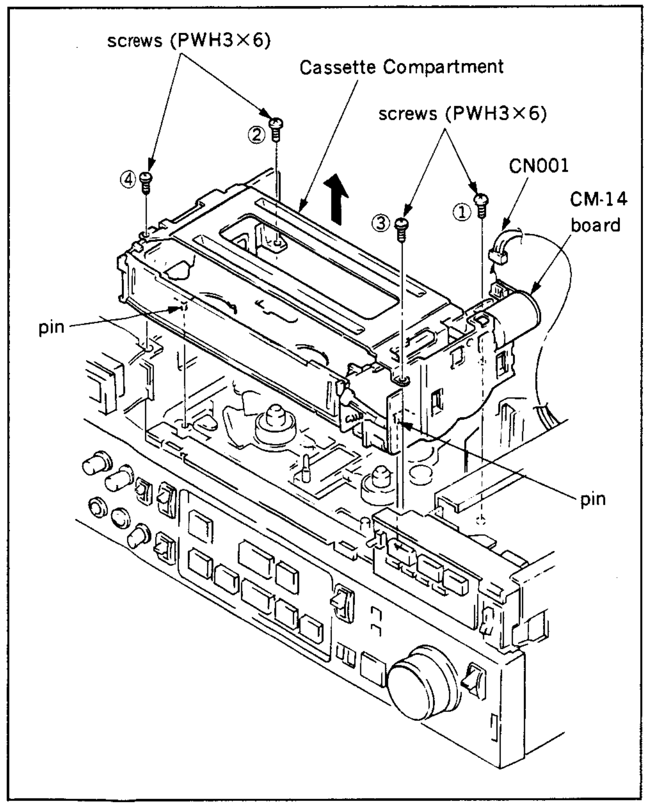
Place the unit with the side panel. Remove four screws, then remove the bottom panel.

2-2. CASSETTE COMPARTMENT (FL Ass'y) REMOVAL

1. Remove the top panel and the side panels and the front panel. (Refer to Sec.2-1 Cabinet Removal and Installation)
2. Disconnect connector CN001 on the CM-14 board.
3. Remove four screws and the cassette compartment in the direction of the arrow.

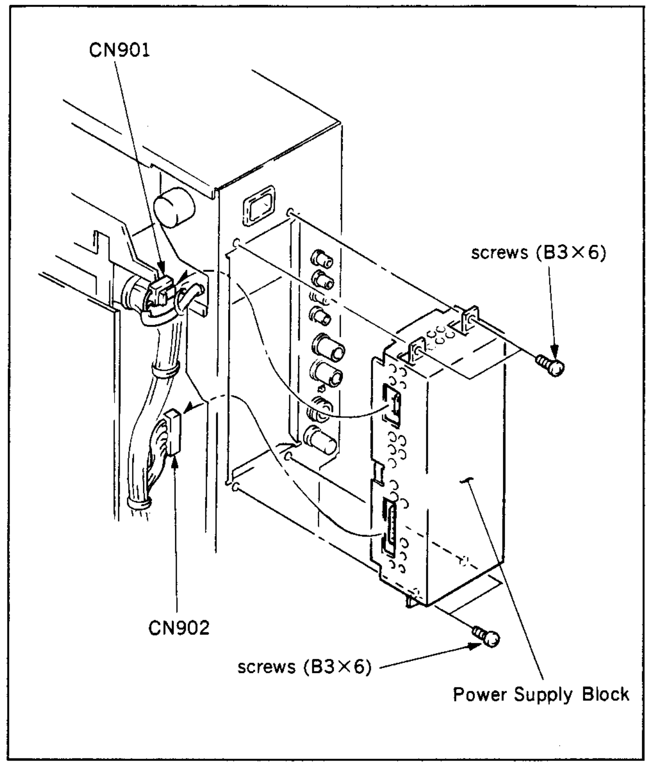
〈Note on installation〉

1) Align two pins of the cassette compartment to the holes of base plate.
2) Fix the screws in order ① to ④.


screws (PWH3×6)
Cassette Compartment
screws (PWH3×6)
②
④
③
①
CN001
CM-14
board
pin
pin

2-3. POWER SUPPLY BLOCK REMOVAL

1. Place the unit with the left side panel at the bottom, and remove the bottom panel. (Refer to Sec. 2-1 Cabinet Removal and Installation)
2. Disconnect connector CN901 and CN902.
3. Remove four screws, and remove the power supply block.


CN901
screws (B3×6)
CN902
screws (B3×6)
Power Supply Block

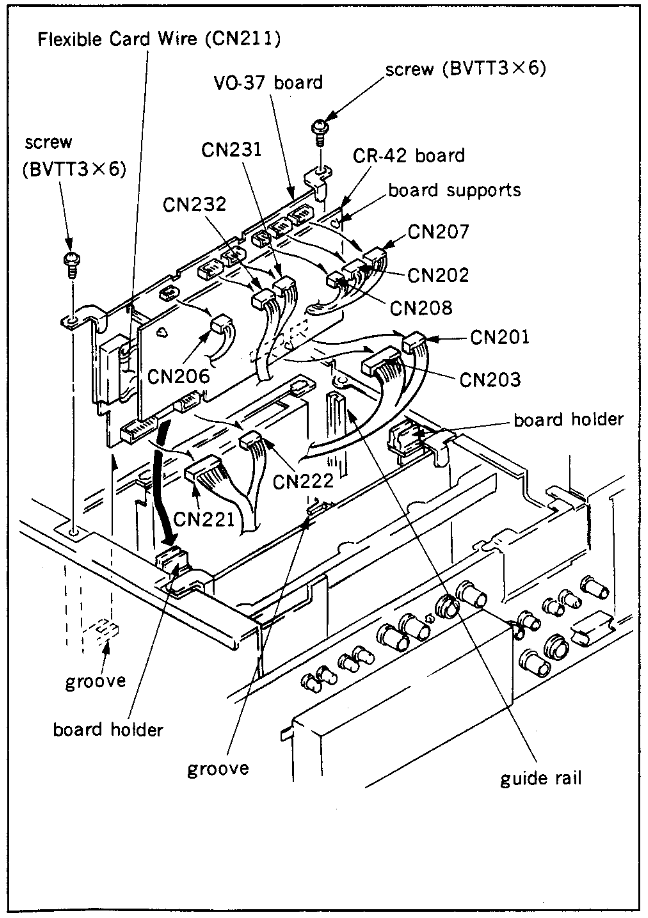
2-4. PRINTED CIRCUIT BOARDS SERVICE

2-4-1. VO-37 and CR-42 Boards Removal

1. Remove the top panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Remove two screws and pull up the VO-37 board and the CR-42 board.
3. Insert the VO-37 board into two board holders for standing it.
4. Disengage three board supports from the CR-42 board, and open the CR-42 board.
5. Disconnect ten connectors (CN201,202,203,206,207,208, 221,222,231,232) and the flexible card wire (CN211) on the VO-37 board.

〈Note on installation〉

- Align the VO-37 board with the two guide rails and the grooves of chassis.

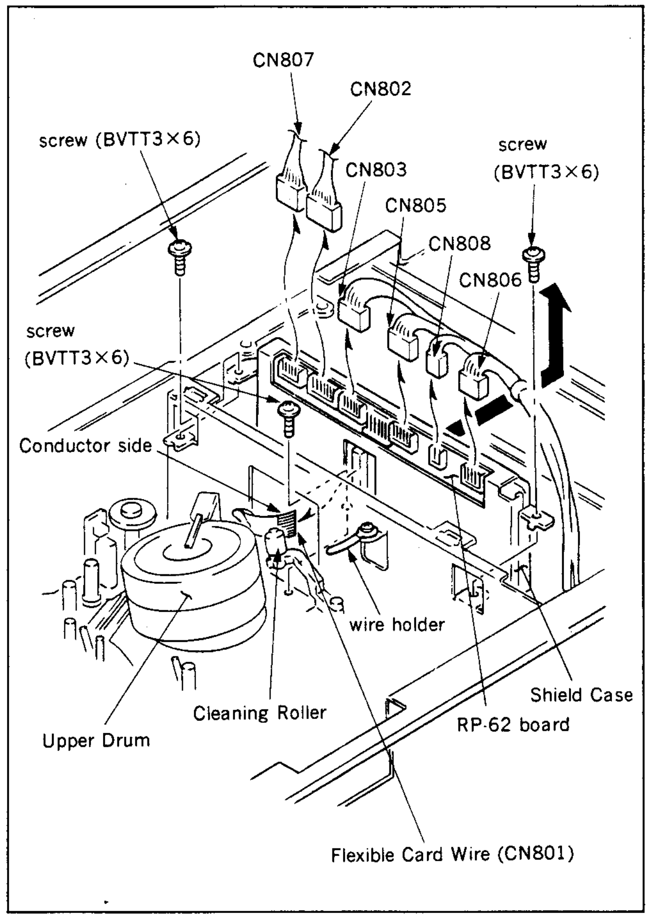

Flexible Card Wire (CN211)
VO-37 board
screw (BVTT3×6)
screw
(BVTT3×6)
CN231
CR-42 board
board supports
CN232
CN207
CN202
CN208
CN201
CN206
CN203
board holder
CN222
CN221
groove
board holder
groove
guide rail

2-4-2. RP-62 Board Removal

1. Remove the top panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Remove harnesses from the wire holder.
3. Disconnect six connectors (CN802, 803, 805 through 808) and the flexible card wire (CN801) on the RP-62 board.
4. Remove three screws and remove the RP-62 board with shield case in the direction of arrow.

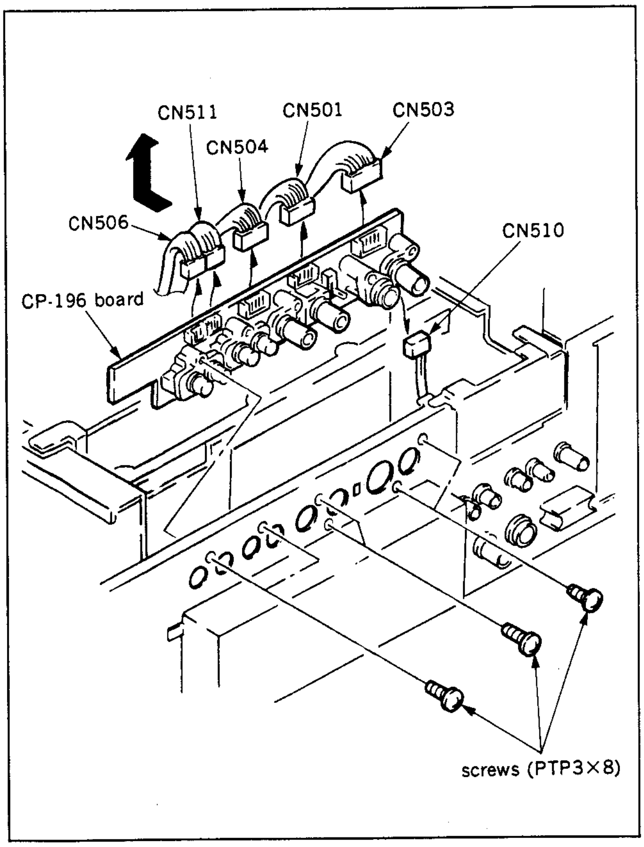
〈Note on installation〉

- Take care of the direction of the Conductor side when reconnecting the Flexible Card Wire. Confirm that the Flexible Card Wire does not touch the upper drum and the cleaning roller.


CN807
CN802
screw (BVTT3×6)
CN803
screw
(BVTT3×6)
CN805
CN808
CN806
screw
(BVTT3×6)
Conductor side
wire holder
Shield Case
RP-62 board
Cleaning Roller
Upper Drum
Flexible Card Wire (CN801)

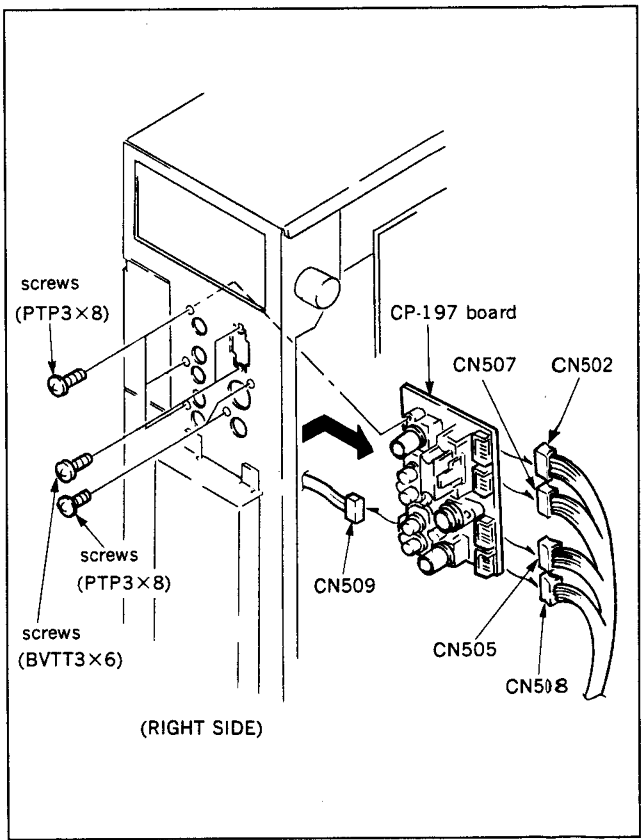
2-4-3. CP-196 Board Removal

1. Remove the top panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Disconnect five connectors (CN501,503,504,506,511) on the CP-196 board.
3. Remove six screws.
4. Remove the CP-196 board, and disconnect connector CN510.


CN511
CN501
CN503
CN504
CN506
CN510
CP-196 board
screws (PTP3×8)

2-4-4. CP-197 Board Removal

1. Place the unit with the right side panel at the bottom, and remove the top panel and the bottom panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Disconnect four connectors (CN502,505,507,508) on the CP-197 board.
3. Remove seven screws.
4. Remove the CP-197 board, and disconnect connector CN509.


screws
(PTP3×8)
CP-197 board
CN507
CN502
screws
(PTP3×8)
CN509
screws
(BVTT3×6)
CN505
CN508
(RIGHT SIDE)

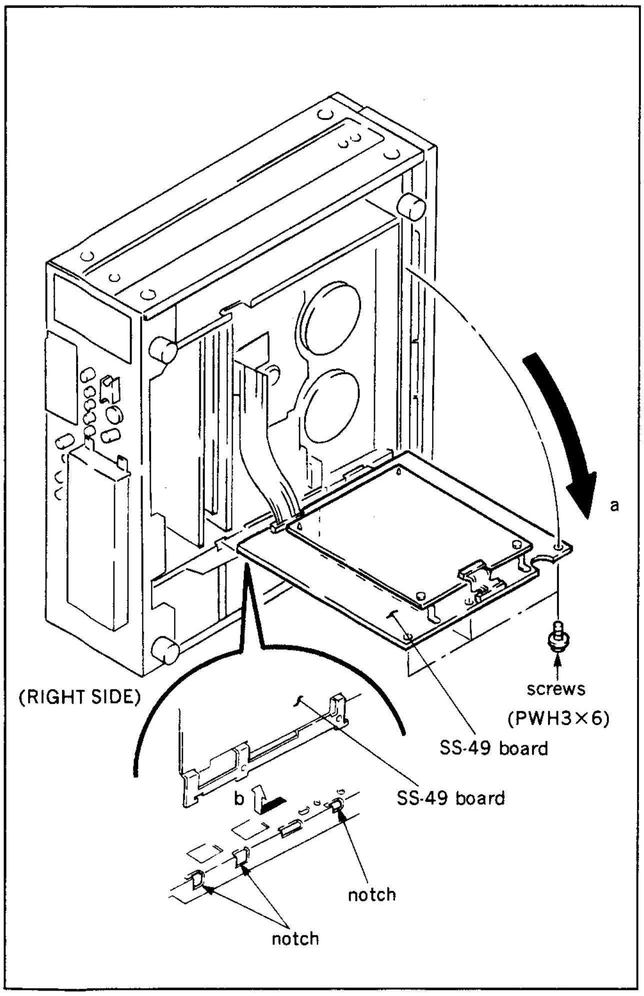
2-4-5. SS-49 Board Opening and Removal

Opening

1. Place the unit with the right side panel at the bottom, and remove the bottom panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Remove four screws, then open the SS-49 board in the direction of arrow a taking care of the notches.

Removal

1. Disconnect all of connectors on the SS-49 board.
2. Remove the SS-49 board from notches moving the SS-49 board in the direction of arrow b.


a
(RIGHT SIDE)
screws
(PWH3×6)
SS-49 board
b
SS-49 board
notch
notch

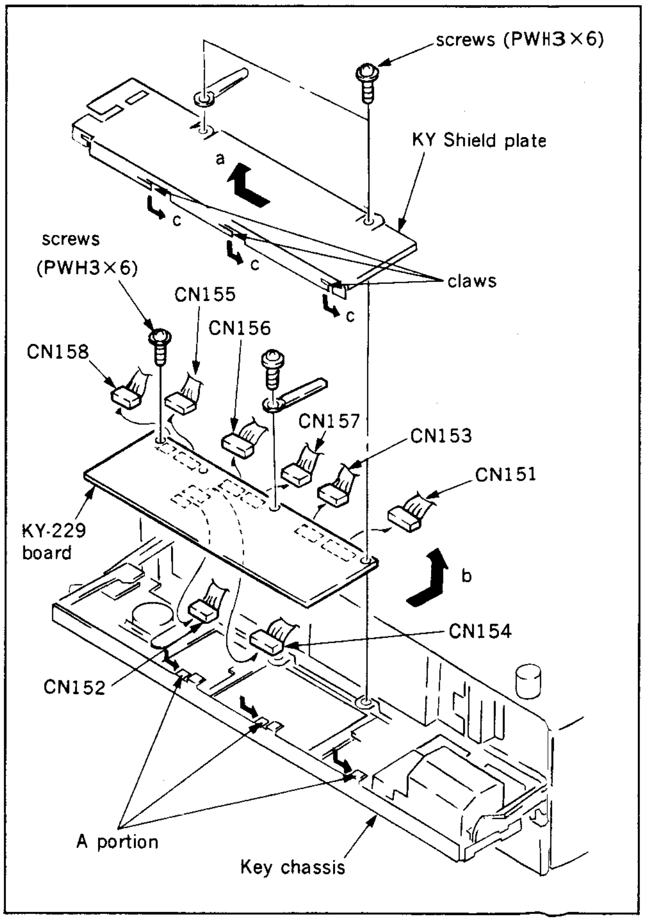
2-4-6. KY-229 Board and SW-513 Board Removal

Place the unit with the top panel at the bottom and remove the key panel. (Refer to Sec. 2-1 Cabinet Removal and Installation)

- KY-229 Board

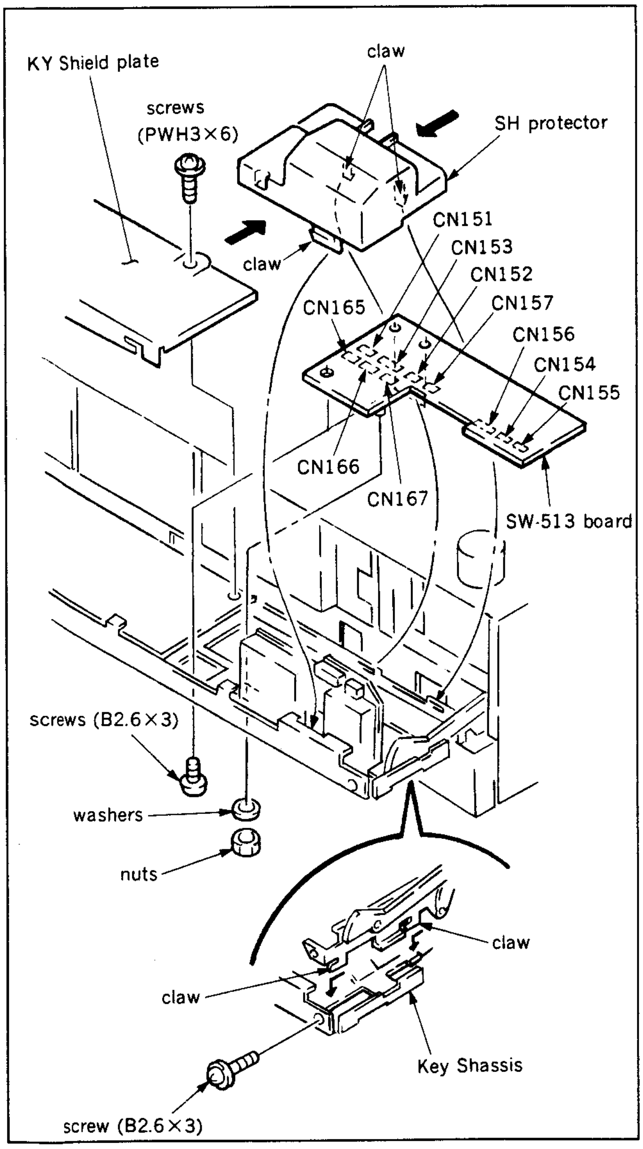
1. Open the key chassis.
2. Remove two screws, then remove the KY shield plate moving it in the direction of arrow a.
3. Remove two screws, then remove the KY-229 board moving in the direction of arrow b.
4. Disconnect eight connectors CN151 through 158 on the KY-229 board.
5. Disconnect CN167 on the SW-513 board.
   (Refer to • SW-513 Board as follows)

⟨Note on installation⟩
When the KY shield plate is installed, insert the claws of KY shield plate into the A portion of the key chassis moving in the direction of arrow c.


screws (PWH3×6)
KY Shield plate
a
c
c
c
claws
screws
(PWH3×6)
CN155
CN156
CN158
CN157
CN153
CN151
KY-229
board
b
CN154
CN152
A portion
Key chassis

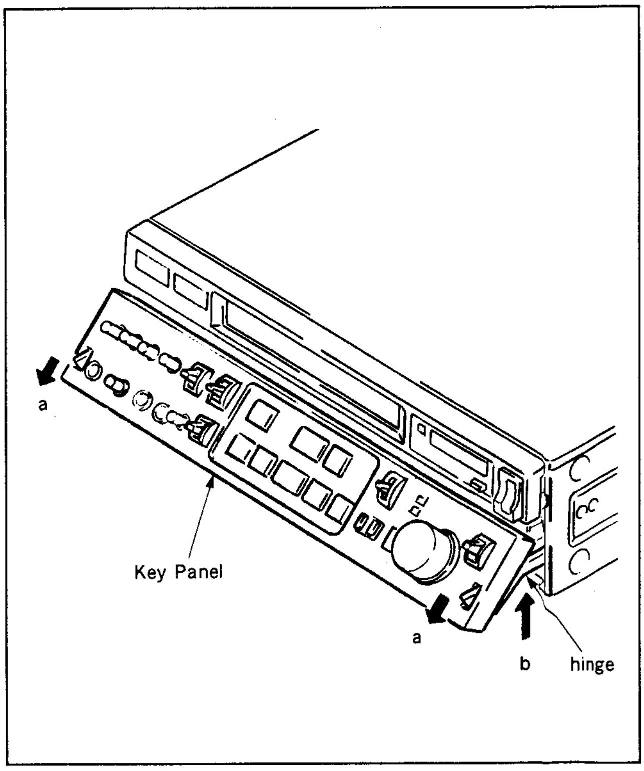
- SW-513 Board

1. Remove three screws on the SW-513 board, and remove nuts and washers of AUDIO LEVEL (four) and TRACKING (one).
2. Remove the KY shield plate.
3. Push the SH protector in the direction of the arrow, and remove the SH protector disengaging projections.
4. Remove a screw on the key chassis, and remove the board disengaging claws of hinge.
5. Disconnect ten connectors (CN151 through 157, 165 through 167).


KY Shield plate
claw
screws
(PWH3×6)
SH protector
claw
CN151
CN153
CN152
CN165
CN157
CN156
CN154
CN155
CN166
CN167
SW-513 board
screws (B2.6×3)
washers
nuts
claw
claw
Key Shassis
screw (B2.6×3)

2-5. POSITION ADJUSTMENT OF KEY PANEL

Open the key panel pushing down the right and left levers on the key panel in the direction of arrow a.
It is possible to open the key panel at the 30, 60 and 90 degrees.
If the key panel is opened at a 90 degrees, it is possible to operate switches on the sub panel.
When closing the key panel, pushing up the right and left hinges in the direction of arrow b.

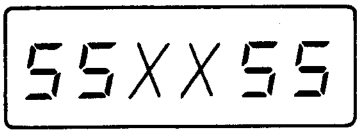

a
Key Panel
a
b
hinge

2-6. MEMORY KEEP FUNCTION OF EE-PROM (IC102/SS-49 BOARD)

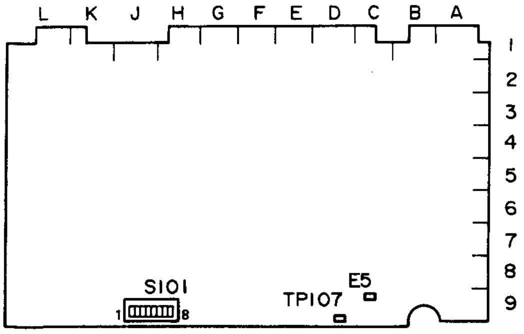
The SS-49 board has EE-PROM M6M80011A (IC102/SS-49 board) which saves the hours meter data and the menu setting data. It also has EE-PROM memory backup capacitor (C103).
When the SS-49 board, the capacitor or the EE-PROM is replaced, the data set prior to replacement will be lost. It is necessary to perform the initial settings for the EE-PROM, then perform menu setting once again. In this case, however, the hours meter value will be cleared to zero, and cannot be set again. (If it is necessary to replace a part, it is recommended that you make a record of the data in the memory prior to replacing the part.)
Procedure of initially setting the EE-PROM (same as factory setting)

- EE-PROM initial setting

(1) Set No.1 and No.5 switches of DIP switch S101 on the SS-49 board (H-9) to on.
(2) Short TP107 (D-9) and E5 (GND)(C-9)on the SS-49 board with the short clip.
(3) Turn the tracking control knob on the front panel to the FIXED position, then turn the POWER switch on.
(4) Wait until the following appears on the display on the front panel.



(5) Remove the shorting clip, then set No.1 and No.5 switches of S101 to off.
(6) Turn off the POWER switch.

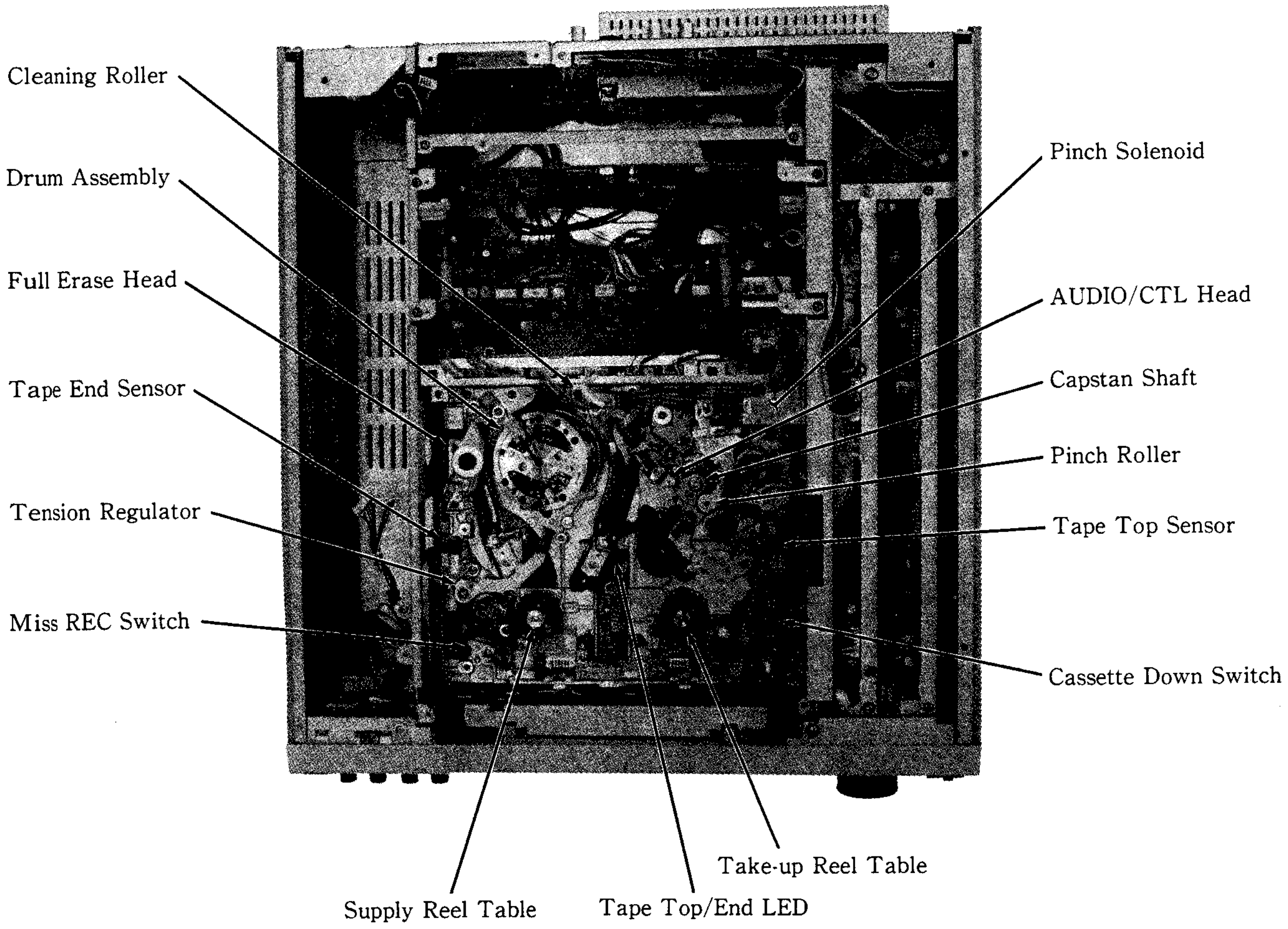


SS-49 Board Component Side

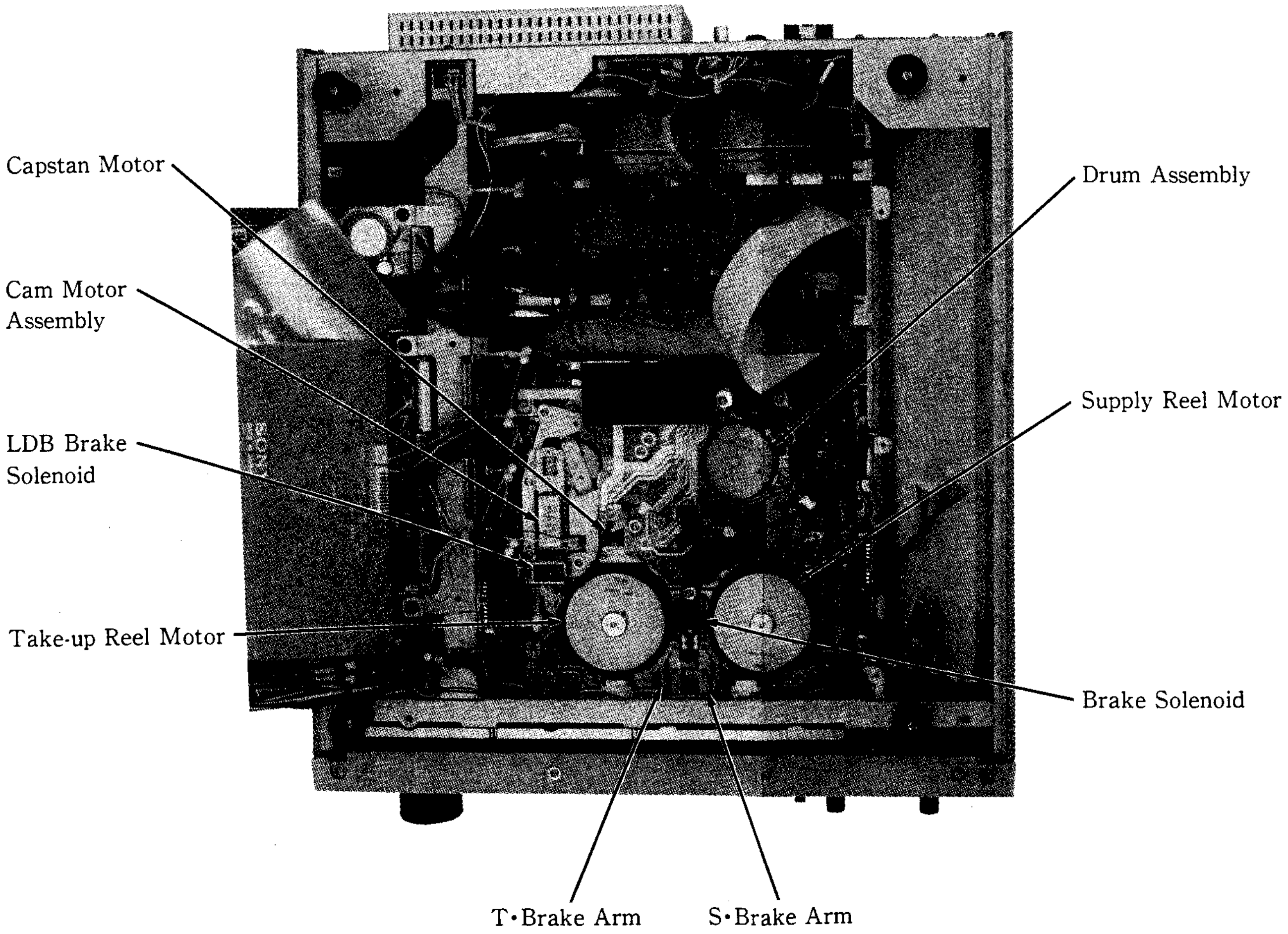
2-7. LOCATION OF MAIN PARTS

2-7-1. Location of the Main Mechanical Parts/Components

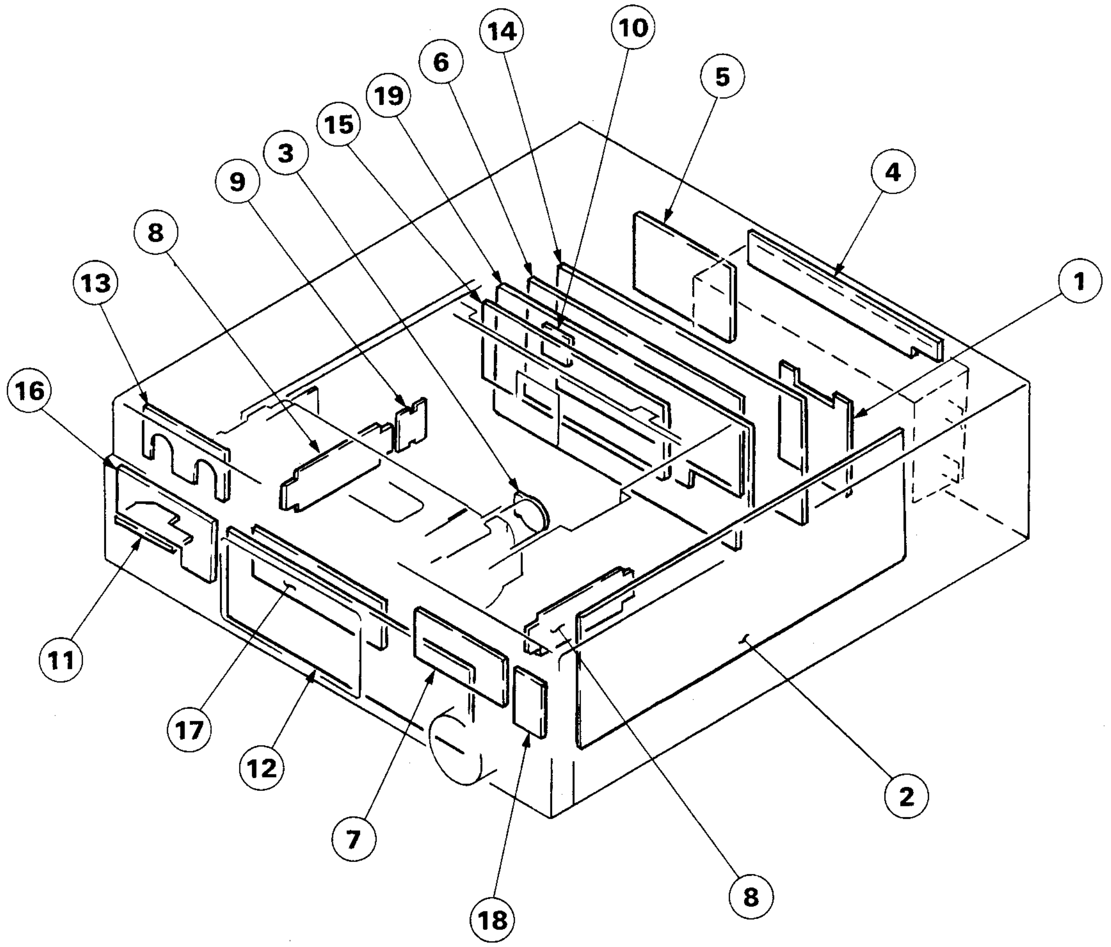
⟨TOP VIEW⟩

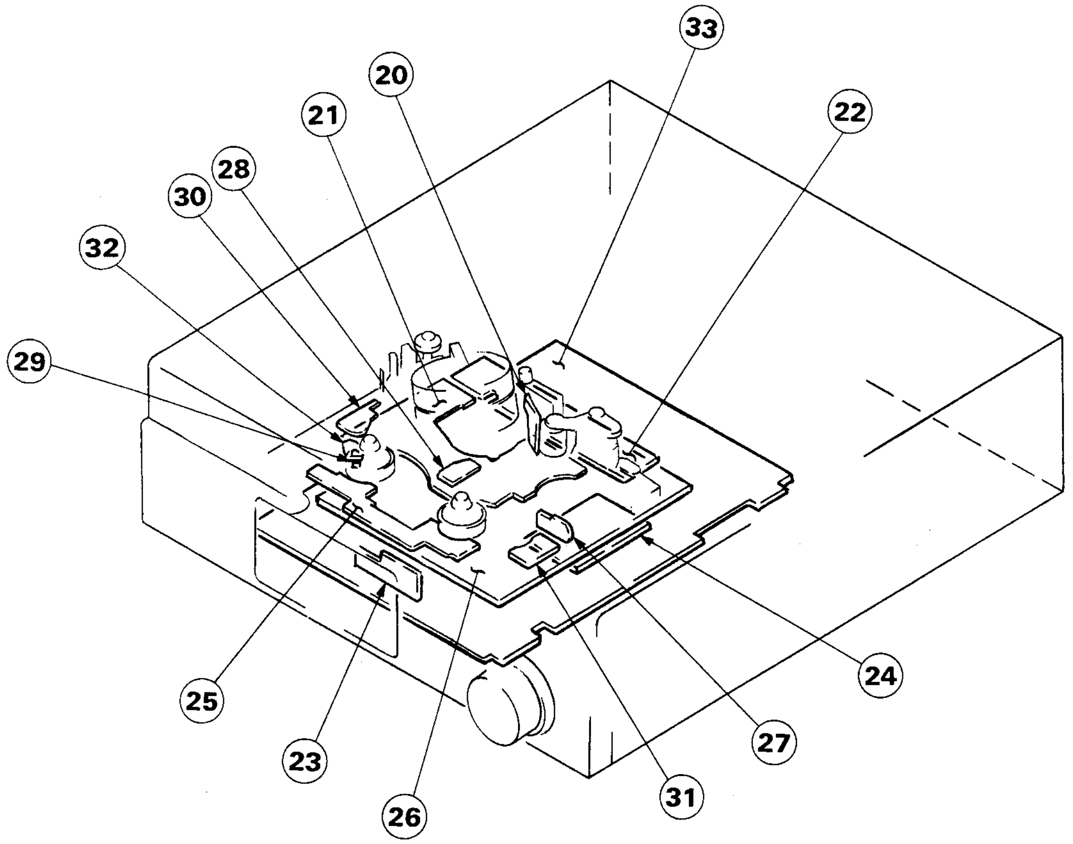

Cleaning Roller
Drum Assembly
Full Erase Head
Tape End Sensor
Tension Regulator
Miss REC Switch
Pinch Solenoid
AUDIO/CTL Head
Capstan Shaft
Pinch Roller
Tape Top Sensor
Cassette Down Switch
Supply Reel Table
Tape Top/End LED
Take-up Reel Table

⟨BOTTOM VIEW⟩


Capstan Motor
Cam Motor Assembly
LDB Brake Solenoid
Take-up Reel Motor
Drum Assembly
Supply Reel Motor
Brake Solenoid
T•Brake Arm
S•Brake Arm

2-7-2. Location of the Printed Circuit Boards


14
10
6
5
19
15
3
9
4
8
1
13
16
11
17
12
7
18
8
2


33
20
21
22
28
30
32
29
25
23
26
31
27
24

① AC-148 Board
② AU-179 Board
③ CM-14 Board
④ CP-196 Board
⑤ CP-197 Board
⑥ CR-42 Board
⑦ DP-166 Board
⑧ DR-153 Board
⑨ DUS-544 Board
⑩ DUS-592 Board
⑪ HP-54 Board
⑫ KY-229 Board
⑬ MT-73 Board
⑭ NR-40 Board
⑮ RP-62 Board
⑯ SW-513 Board
⑰ SW-514 Board
⑱ SW-532 Board
⑲ VO-37 Board

⑳ AH-40 Board
㉑ DR-167 Board
㉒ DR-176 Board
㉓ DUS-445 Board
㉔ DUS-535 Board
㉕ HN-160 Board
㉖ HN-182 Board
㉗ LD-35 Board
㉘ LE-80 Board
㉙ LE-86 Board
㉚ SE-151 Board
㉛ SE-152 Board
㉜ SE-159 Board
㉝ SS-49 Board

2-8. PRINTED CIRCUIT BOARDS

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	RP-62	Video & AFM Head Amp.
	CR-42	Chroma Process
	VO-37 (inc.DUS-592)	Y/C Video Process
	NR-40	Noise Reduce
AUDIO	AU-179	AFM Process/Normal Audio Process
	AH-40	Audio/Erase/CTL Head
	SW-513	Audio Signal Selector
SERVO • SYSTEM CONTROL	SS-49 (inc.DUS-445/535)	Servo & System Control
	DR-153 (a)	T-Reel Driver
	DR-153 (b)	S-Reel Driver
	DR-167	Cam Mode Detect & Drum Motor Driver
	DR-176	Capstan FG Amp. & Capstan Motor Driver
	DUS-544	Capacitor for T-Brake Solenoid
	CM-14	Cassette Compartment Motor
	LD-35	Loading Motor
	LE-80	Tape Top/End LED
	LE-86	Tension Regulator LED
	KY-229	Function Key/LED/Switch
	DP-166	Counter Display
	SE-151	Tape End Sensor
	SE-152	Tape Top Sensor
	SE-159	Tension Regulator CDS Detect
	HN-160	Connection
	HN-182	Connection (Servo)
POWER	AC-148	AC Input
CONNECTOR	CP-196/197	Connection of Rear Connector
	HP-54	HEADPHONES/MIC Connector
	MT-73	Level Meter
	SW-514	Select Switch
	SW-532	TIMER REC/TIMER PLAY Switch

2-9. CONNECTION CONNECTORS

When external cables are connected to the various connectors on the rear panel during maintenance, the hardware listed below (or equivalents) must be used.

panel indication	connector
VIDEO IN VIDEO OUT SYNC IN	1-560-069-11 PLUG, BNC, MALE
VIDEO IN (S VIDEO) VIDEO OUT (S VIDEO)	YC-30V/15V/10V or SYC-5/2 : CABLE (Option)
AUDIO IN AUDIO OUT AUDIO MONITOR	1-560-138-11 PLUG, PIN (PHONO)
TV OUT	1-506-161-00 RECTANGULAR 8P, MALE

2-10. CONNECTOR INPUT/OUTPUT SIGNAL

The connector Input/output signals of the panel are as follows.

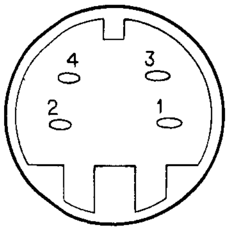
- VIDEO SYSTEM

INPUT

VIDEO IN : BNC type × 2 for bridge connection
Composite video signal : $1.0\pm^{1.0}_{0.5}$ V p-p, 75ohms, Unbalanced, sync negative

S VIDEO IN : 4-Pin mini DIN × 1
Luminance signal : 1.0Vp-p, 75ohms, unbalanced
Color signal : 0.3 Vp-p, burst, 75ohms, unbalanced

<external view>



S-VIDEO

PIN No.	INPUT SIGNAL
1	Y (G)
2	C (G)
3	Y (X)
4	C (X)

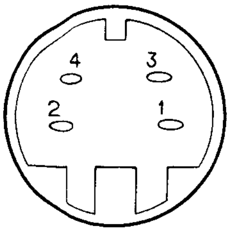
SYNC IN : BNC type × 1
0.3 to 4 V p-p, 75ohms, unbalanced, sync negative

OUTPUT

VIDEO OUT : BNC type × 1
Composite video signal : 1.0±0.2 V p-p, 75ohms, Unbalanced, sync negative

S VIDEO OUT : 4-Pin mini DIN × 1
Luminance signal : 1.0 V p-p, 75ohms, unbalanced
Color signal : 0.3 V p-p, burst, 75ohms, unbalanced

<external view>

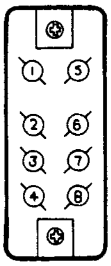


S-VIDEO

PIN No.	OUTPUT SIGNAL
1	Y (G)
2	C (G)
3	Y (X)
4	C (X)

TV OUT : 8-Pin multi × 1
Composite signal : 1.0Vp-p, 75ohms, sync negative

<external view>



TV OUT

PIN No.	OUTPUT SIGNAL
1	AUDIO MONITOR OUT (X)
2	VIDEO OUT (X)
3	――
4	――
5	AUDIO MONITOR OUT (G)
6	VIDEO OUT (G)
7	――
8	――

- AUDIO SYSTEM

INPUT

AUDIO IN NORM/Hi-Fi CH-1/L, CH-2/R
: Phono jack × 1 each
−6dBs, 47kilohms, unbalanced
MICROPHONES CH-1, CH-2
: Phone jack × 1 each
−60dBs, 3kilohms, unbalanced

OUTPUT

AUDIO OUT NORM/Hi-Fi CH-1/L, CH-2/R
: Phono jack × 1 each
−6dBs (47kilohms load), unbalanced
MONITOR OUT
: Phono jack × 1
−5dBs (47kilohms load), unbalanced
TV OUT
: 8-Pin multi × 1
−5dBs (47kilohms load), unbalanced
HEADPHONES
: Stereo phone jack × 1
−18dBs to −48dBs (8kilohms load), unbalanced

2-11. RACK MOUNTING

This unit can be mounted in a 19-inch standard rack. It is recommended to use the following kit.

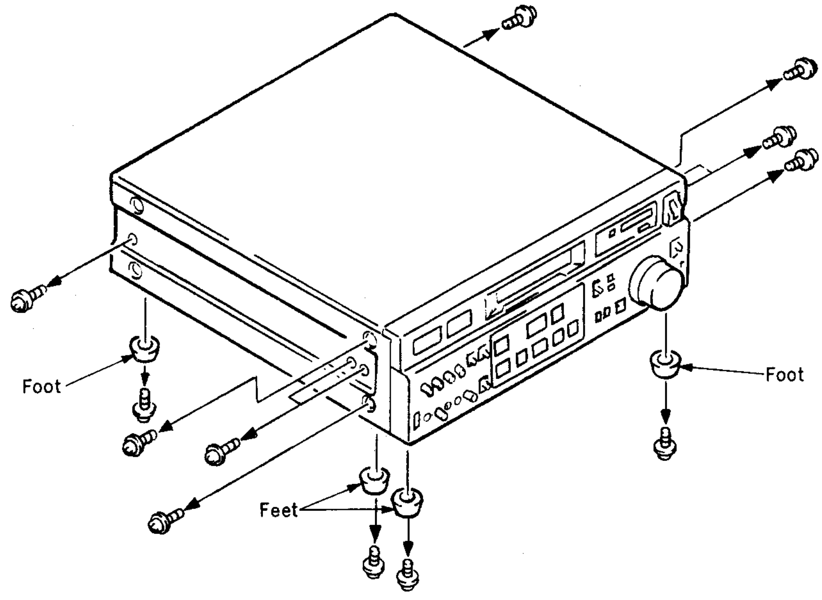
SONY Rack Mount Metal : RMM-980 (Optional Accessory)

- Component parts

slide rail	×2
handle	×2
L-shaped wrench	×1
hexagon socket bolt (4×10)	×8
W4 middle	×8
plate nut	×4
screw (B4×8)	×4
(B4×16)	×4
(RK5×14)	×4
trapezoid type washer	×4

2-11-1. In Case of Use Kit RMM-980

1. Remove each five screws on right and left side panels, and the four feet on the bottom panel. If the unit is mounted in the rack with the feet attached, they will contact the lower other unit in the rack and the unit cannot be pulled out from the rack.



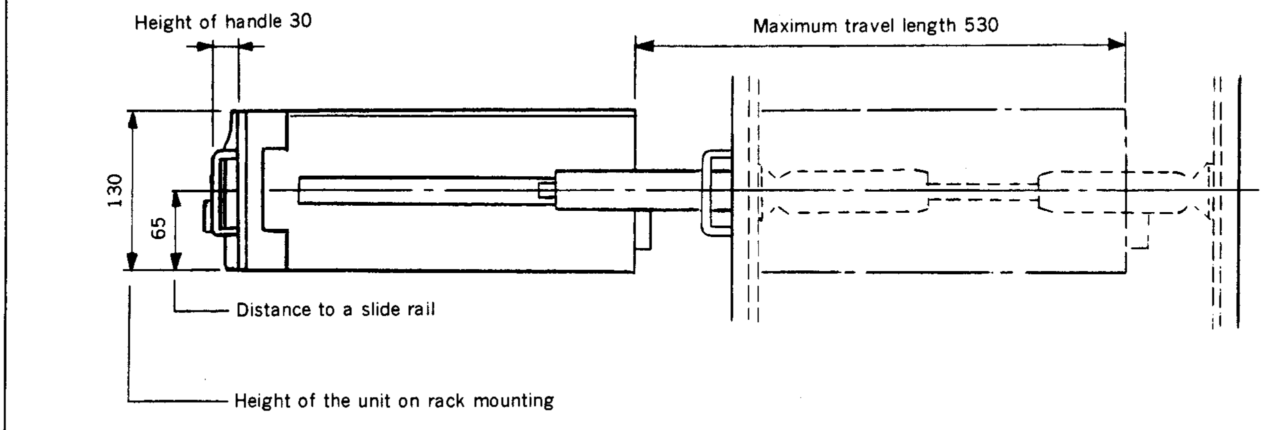
2. Install slide rails and handles.

   As to mounting method of the rack mounting kit, refer to OPERATING INSTRUCTIONS packed with the rack mount metal RMM-980.

Note on rack mounting :

- When several units are mounted in a rack, it is recommended to install a fan for ventilation. Good air circulation is essential to prevent internal heat build-up in a rack(10°C to 35°C must be met for all units).
- Never remove a upper panel and lower panel during rack mounting.
- Be sure to secure the rack to the floor to avoid accidents when a unit is pulled out.

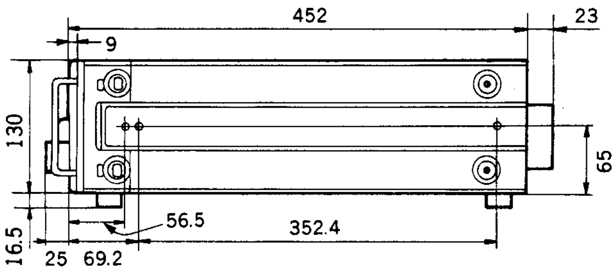
- Maximum travel length of the RMM-980 is as follows.


Height of handle 30
Maximum travel length 530
130
65
Distance to a slide rail
Height of the unit on rack mounting

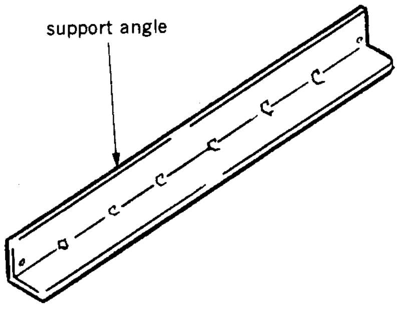
Unit=mm

2-11-2. In Case of Use Kit except RMM-980

When a support angle or a slide rail sold by rack makers is used, check the outside dimensions of the unit and the slide rail mounting holes according to the instruction manual of each rack maker.


452
23
9
130
65
16.5
25
69.2
56.5
352.4

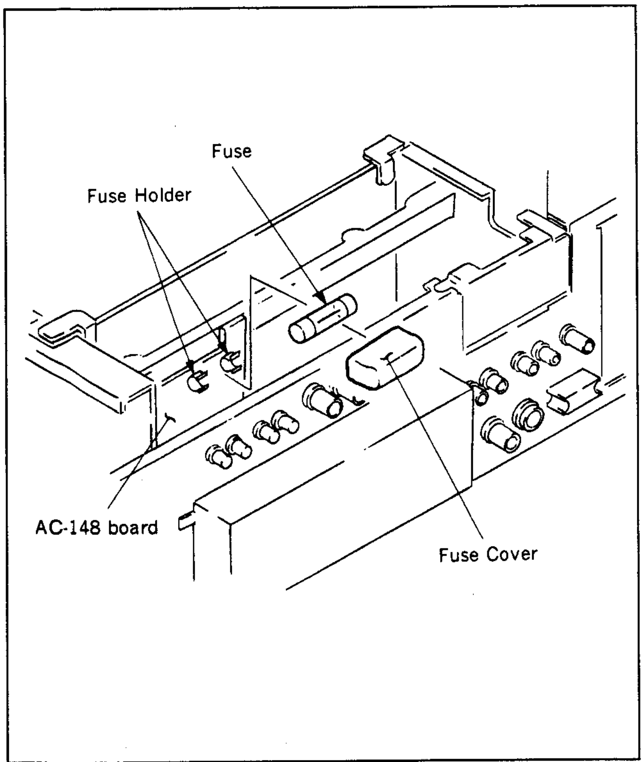
Unit=mm


support angle

2-12. FUSE REPLACEMENT

Power fuse is mounted on the AC-103 board. If the fuse has blown first remedy cause of trouble, replace the fuse.

1. Remove the top panel. (Refer to Sec.2-1 Cabinet Removal and Installation)
2. Remove the fuse cover on the AC-148 board, and replace the fuse.



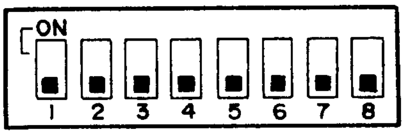
2-13. SWITCH SETTING

- NR-40 Board

S1 : ON (Shipped position) PB VIDEO MUTE OFF

- SS-49 Board

S101-1 to S101-8 : OFF (Shipped position)



Function of S101 switches (ON position)

S101-1. Error detection signal muting/tracking control center position detection.
Error detection signal muting: This switch disables error signals of system control block. Even though the machine operation is not stopped due to error detection.
TRACKING (VR) center position detection: Set the TRACKING (VR) control position to center. When power is turned on while TP107 and GND are short-circuited, the center position of TRACKING control is stored in the form of DC voltage by microprocessor (IC101/SS-49)

S101-2. E-E muting OFF: This switch disables the signal that mutes E-E signal.
Machine can enter E-E mode even in the mode when E-E mode is cancelled.
E-E can be established with the cassette whose record safety tab is broken.

S101-3. Always OFF

S101-4. SEARCH DIAL DIRECT mode
Machine can enter search mode even without pressing SEARCH button of key panel, enabling SHUTTLE dial operation.

S101-5. MENU initialize
The content of MENU setting is re-set into the default content of initial setting.

S101-6. Always OFF

S101-7. SERVICE mode: Ordinary maintenance work is done in OFF mode.

S101-8. TOP/END sensor muting
This switch mutes tape top and tape end detection signals.

2-14. SPARE PARTS

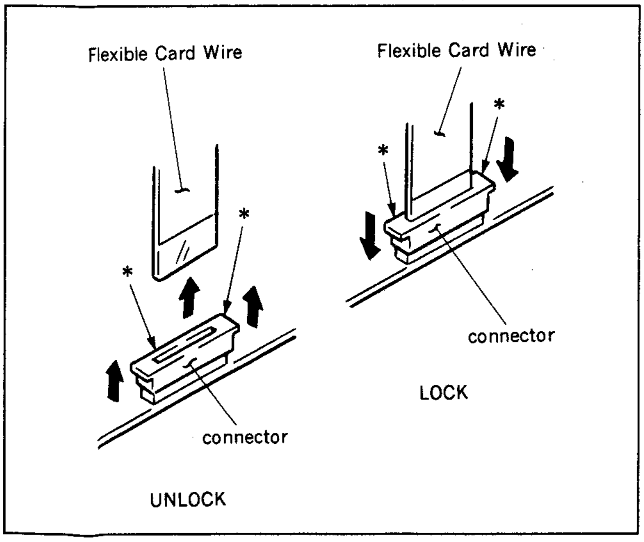
2-14-1. Spare Parts

1. The ⚠ -marked components are critical to safety. Replace only with the same components as specified.
2. Replacement parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to the use of improved parts and/or to engineering changes or standardization of genuine parts. This manual's exploded views and electrical spare parts list indicate the part numbers of the standardized genuine parts in use at present. Regarding part changes in our engineering department, refer to Sony service bulletins and service manual supplements.
3. The parts marked with a in the SP column of the exploded views and electrical spare parts list are normally stocked for replacement purposes. The parts marked with o in the SP column are not normally required for routine service work. Orders for parts marked with o will be processed, but allow for additional delivery time.

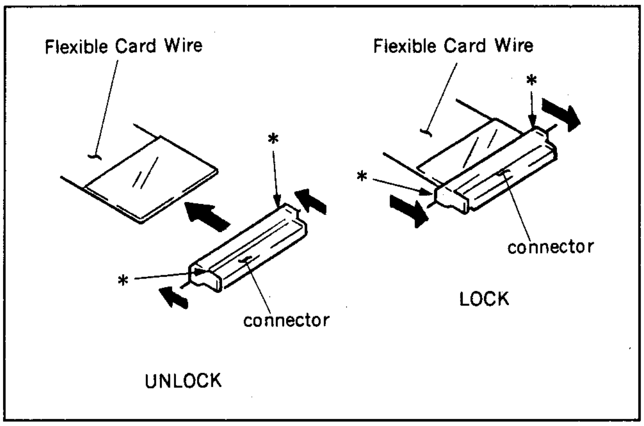
2-14-2. Replacement of Flexible Card Wires (20P, 26P, 28P)

20P flexible card wire is used on between the SS-49 board and the HN-182 board. 26P flexible card wire is used on between the CR-38 board and the VO-37 board. 28P flexible card wire is used on between the DR-176 board and the SS-49 board.
When handling a flexible card wire, be very careful not to bend it because this will markedly reduce its life.

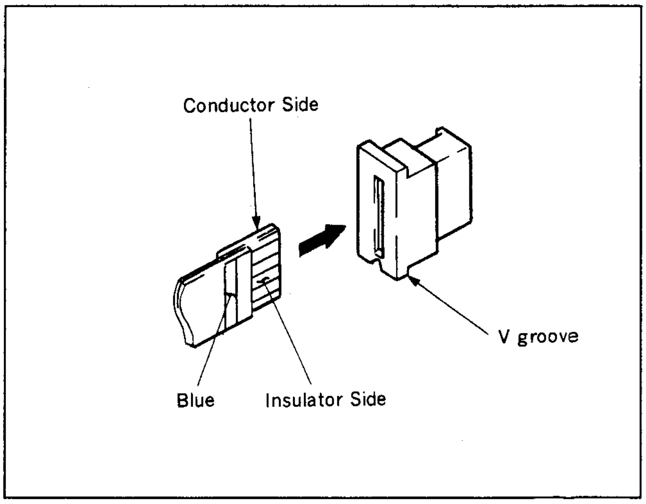
<Straight Type>
Disconnecting procedure
Pull up the * marked portions of connector, and pull out the flexible card wire from the connector.
Installing procedure
Install the flexible card wire as far as it will go (up the line indicated on the flexible card wire) and push down the * marked portions of connector.



<Angle Type>
Disconnecting procedure
Slide the * marked portions of connector in the direction of the arrow, and then pull out the flexible card wire from the connector.
Installing procedure
Insert the flexible card wire so that is conductor side is facing the printed circuit board, and insert it as far as it will go (up to the line indicated on the flexible card wire). Then slide it in the opposite direction of the arrow to lock.



Note : The flexible card wire consists of conductor side and insulator side. The flexible card wire must be inserted with the conductor side facing the correct way. If it is not the circuit will not work.



2-15. OPERATION OF THE VTR WITHOUT THE CASSETTE COMPARTMENT ASS'Y OR THE CASSETTE TAPE

1. Remove the cassette compartment. (Refer to Sec. 2-2 Cassette Compartment Removal)
2. Turn on No.8 switch of DIP switch S101/SS-49 board (J-9). (This stops tape top/end stop sensor function.) (Fig. 1.)
3. Push down the CASSETTE DOWN switch with tape and etc. (Fig. 2.)
4. Turn on the POWER.

In this condition, the VTR can be operated on the front panel and with remote controller (RM-V200, RM-V100, SVRM-100 etc.)

Note : Be sure to turn off No.8 switch after operation.

[Operating the VTR with the cassette compartment removed and a cassette tape loaded.]

- Be sure to turn off No.8 switch of DIP switch S101. (If the DIP switch is turned on, the tape will not stop at the tape top/end, and it is possible to damage the head tip and to deform the tape guide.)

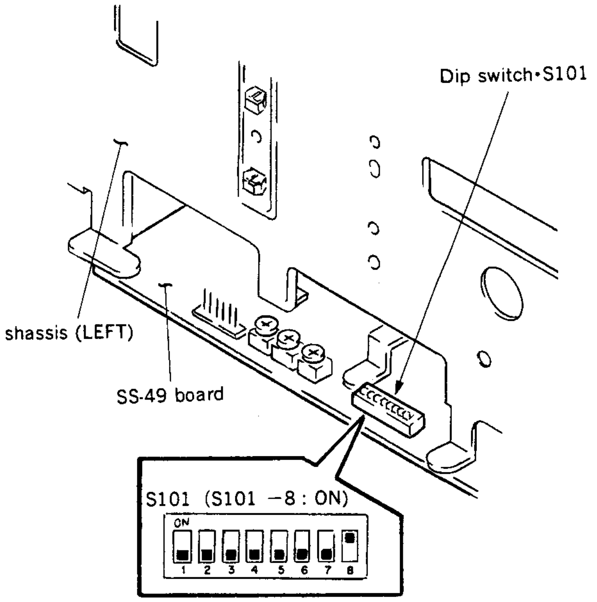

Dip switch•S101
shassis (LEFT)
SS-49 board
S101 (S101 −8 : ON)
ON
1 2 3 4 5 6 7 8

Fig. 1.

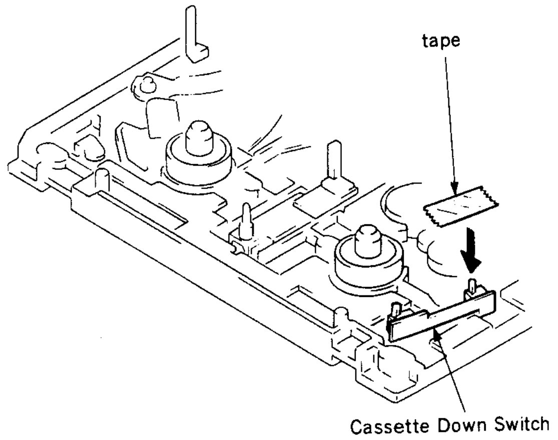

tape
Cassette Down Switch

Fig. 2.

2-16. CASSETTE TAPE REMOVAL WHEN NORMAL EJECTION IS NOT POSSIBLE

1. Remove the top panel and right and left side panels. (Refer to Sec.2-1 Cabinet Removal and Installation)
2. Open the SS-49 board. (Refer to Sec.2-4-5 SS-49 board Opening)
3. Remove the screw, and remove the cam motor ass'y from the drive gear ass'y.
4. Rotate the worm wheel of the drive gear ass'y manually in the direction of the arrow until the tape threading guides are in the unthreading end state.
5. Rotate the S side reel motor by hand in the direction of the arrow so that the tape is taken up into the cassette. (Fig. 1.)
6. Rotate the loading motor of the cassette compartment ass'y manually in the direction of arrow, and eject the cassette . (Fig. 2.)

CAM motor Ass'y Installation

1) Fit the groove of the cam motor ass'y over the 'a' face of the drive gear ass'y.
2) Align the hole in the cam motor ass'y with the projection on the drive gear ass'y.
3) Set the cam motor parallel to the 'b' face of the drive gear ass'y, then screw is fixed. (Fig. 3.)

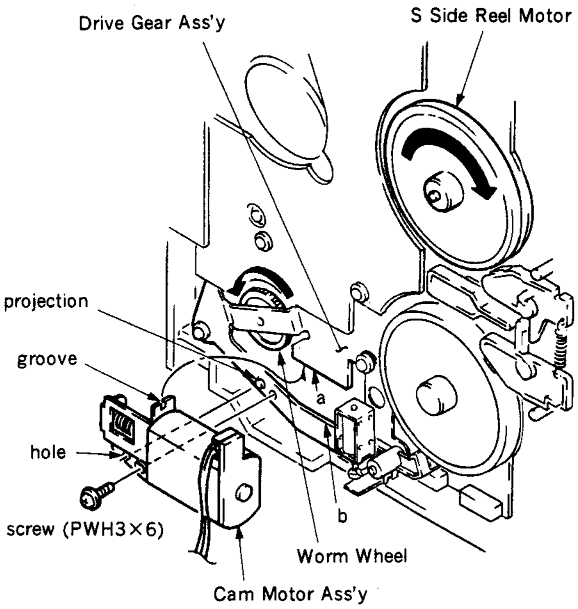

Drive Gear Ass'y
S Side Reel Motor
projection
groove
hole
screw (PWH3×6)
a
b
Worm Wheel
Cam Motor Ass'y

Fig. 1.

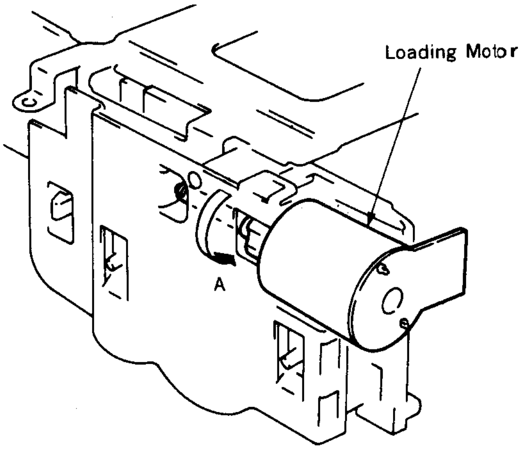

Loading Motor
A

Fig. 2.

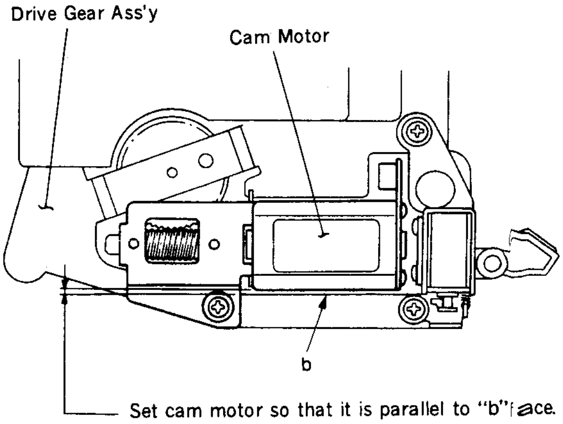
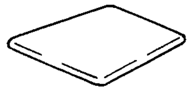

Drive Gear Ass'y
Cam Motor
b
Set cam motor so that it is parallel to "b" face.

Fig. 3.

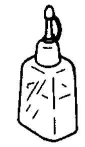
2-17. ALIGNMENT FIXTURE

Ref. No	Part No.	Description	For Use
J-1	2-034-697-00	Cleaning Cloth	Cleaning
J-2	9-919-573-01	Cleaning Fluid	Cleaning
J-3	7-700-736-05	L-Shaped Hexagonal Wrench (1.5 mm)	Reel table ass'y replacement
J-4	7-700-736-06	L-Shaped Hexagonal Wrench (0.89 mm)	Guide roller ass'y replacement
J-5	9-911-053-00	Thickness Gauge	Guide roller ass'y replacement
J-6	H-7099-052-H	Alignment Tape, JVC-MH-2 (PAL)	Switching position adjustment
J-7	8-192-603-96	Alignment Tape, KRV-39PF	Audio alignment
J-8	Pending	Alignment Tape, KRV-45HPS (S-VHS)	Tape run alignment Video alignment
J-9	Pending	Alignment Tape, KRV-45PS (VHS)	Audio alignment Video alignment
J-10	8-192-602-48	Alignment Tape, KRV-4821PSA (PAL)	X Value adjustment, Tracking adjustment Audio Head adjustment
J-11	8-896-024-94	Reference Tape (Blank Tape), GR-120KG	Video and Audio alignment (VHS format only)
J-12	J-6380-710-A	X Value Adjustment Tool	X Value adjustment
J-13	H-7099-035-H	Torque Gauge Adaptor	S/T Reel table winding torque check
J-14	H-7099-039-H	Torque Gauge	
J-15	J-6380-040-A	RG Reference Pin (1)	Drive gear replacement
J-16	J-6380-050-A	RG Reference Pin (2)	
J-17	J-6380-080-A	Reference Plate	Reel table and tape guide height adj. Audio head azimuth and zenith adj.
J-18	J-6380-090-A	Reel Table Height Adj. Tool	Reel table height adjustment
J-19	J-6380-700-A	Master Block	Tape guide height adjustment Audio head azimuth and zenith adj.
J-20	J-6380-550-A	Master Block	Tape guide height adjustment
J-21	J-6080-840-A	Small Mirror	Tape run alignment
J-22	Standard Products	Tentelometer, T2-H7-UMC	Tape tension adjustment
J-23	Standard Products	Head Degausser	Head degauss
J-24 J-25	J-6082-044-A or J-6080-811-A	Tape Guide Adjustment Screwdriver	Tape guide height adjustment
J-26	7-700-751-02	Box Screwdriver (width 5.5 mm)	Tape run adjustment
J-27	J-6090-014-A or Standard Products	MOLYKOTE Grease EM-30LG MOLYKOTE Grease EM-30L (DOW CORNING Corp.)	Greasing
J-28	J-6381-380-A	S-BNC Video Cable	Video alignment
J-29	J-6381-370-A	RP Extension Tool	Video and Audio alignment
J-30	J-6381-910-A	Y/C Delay Adjustment Tool	Video alignment

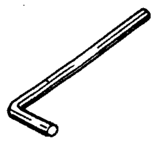
J-1



J-2



J-3, J-4



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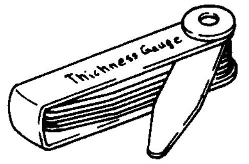
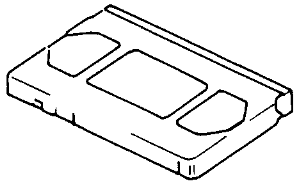


J-6, J-7, J-8, J9, J-10, J-11



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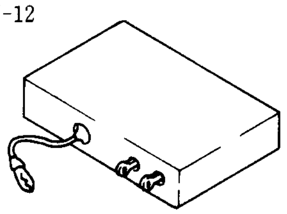

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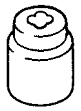

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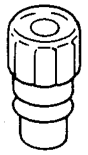

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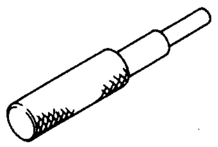

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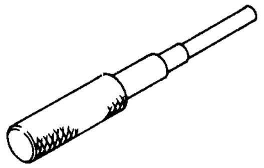

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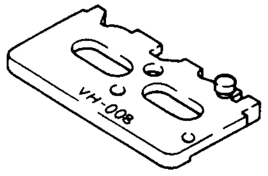
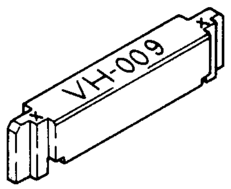
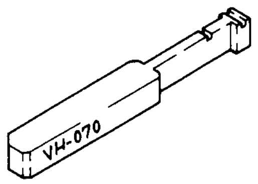


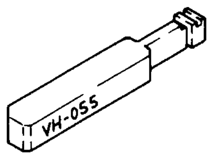
J-18



J-19



J-20



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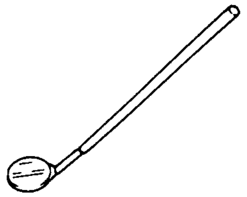

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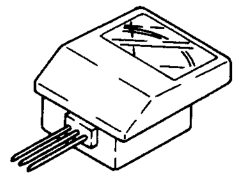

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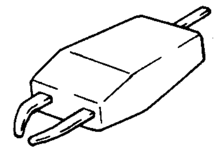

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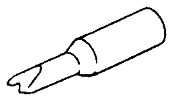

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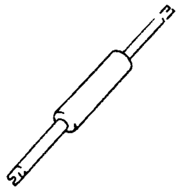
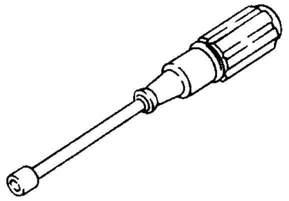


J-26



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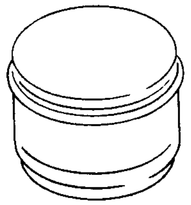

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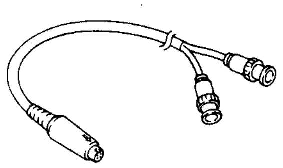

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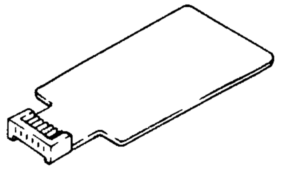
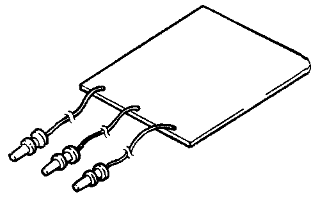


J-30



SECTION 3
PERIODIC CHECK AND MAINTENANCE

It is recommended that you carry out the following periodic checks and maintenance in order to obtain good performance and ensure a long life for the unit and tape. Use the hours-meter value displayed on the front panel as a guide for determining the check timing.

3-1. MAINTENANCE AFTER REPAIRS

Carry out the following maintenance after repair without regard to the operating hours of the unit.

(1) Cleaning Rotary Upper Drum
Press a cleaning cloth moistened with cleaning fluid lightly against Rotary Upper Drum and turn the Rotary Upper Drum slowly counterclockwise by means of a hand.

Note : Never turn the Drum by means of the unit is switched. Never turn it clockwise by means of a hand. If cleaning head chip, never move the cleaning cloth in vertical direction. You damage the head chip.

(2) Cleaning the tape run system (See drawing as shown below.)
Clean the tape run system (guides TG-1 to TG-9, RVS guide, F•R guide, capstan shaft, pinch roller, audio head, and FE head) with a cleaning piece moistened with cleaning fluid.

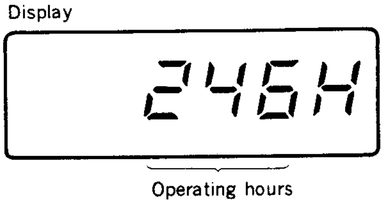
(3) Cleaning the drive system
Clean the surface of the reel table with a cleaning piece moistened with cleaning fluid.

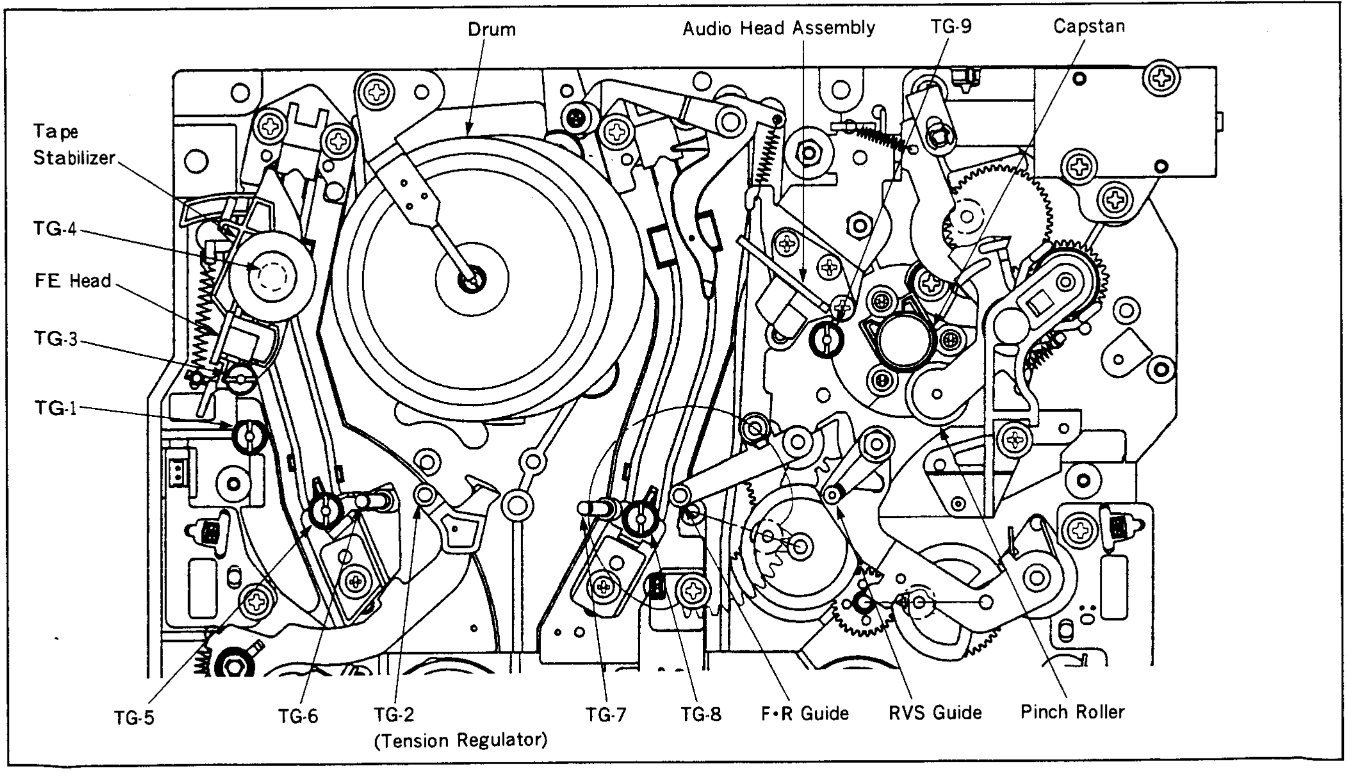
3-2. HOURS METER

The front panel display of this VTR can display the accumulated operating hours of the video heads.

- Procedure of displaying hoursmeter

1) Set the CTL/MENU switch to CTL.
2) Set the PROGRAMMED OPERATION switch to B◯A.
3) Keep the RESET button depressed for ammount 2 seconds.


Display
246H
Operating hours


Drum
Audio Head Assembly
TG-9
Capstan
Tape Stabilizer
TG-4
FE Head
TG-3
TG-1
TG-5
TG-6
TG-2 (Tension Regulator)
TG-7
TG-8
F•R Guide
RVS Guide
Pinch Roller

3-3. PERIODIC CHECK

Carry out periodic checks and maintenance according to operating hours of the unit.

○ : Cleaning ◆ : Replacement ◇ : Checking □ : Greasing

Item			Hours of use (H) : Hour of Drum Rotation										Reference Section
	Part Name	Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Run System	Tape Run surface	—	○	○	○	○	○	○	○	○	○	○	—
	(Note 1) Pinch Roller Block Ass'y	A-6750-279-C	○	○	○	◆/□	○	○	○	◆/□	○	○	4-12
	Audio Head Ass'y	A-8262-502-A	○	○	○	○	○	○	○	◆	○	○	4-10
	Guide Roller Ass'y	X-3165-337-1								◆			4-25,4-27
	Shaft Ground Ass'y	X-3165-584-1								◆			4-4
	FE Head	1-543-695-11	○	○	○	○	○	○	○	◆	○	○	4-8
	Capstan Motor (SCV-0401A)	8-835-480-02	○	○	○	○	○	○	○	◆	○	○	4-30
	Upper Drum Ass'y (DZR-41-R)	8-848-579-02	○	◆	○	◆	○	◆	○		○	◆	4-4
	Drum Ass'y (DZH-41A-R)	8-848-578-12	○	○	○	○	○	○	○	◆	○	○	4-5
Drive System	Brake Arm (S) Ass'y	X-3165-330-3								◆			4-18
	Brake Arm (T) Ass'y	X-3165-331-2								◆			4-18
	Reel Table Ass'y	X-3165-345-1				○				○			4-17
	LDB Arm Ass'y	X-3166-511-1								◆			4-32
	Cleaning Roller Ass'y	X-3743-515-4				◆				◆			4-3
	Reel Moter (SRV-0201A)	8-835-432-01								◆			4-19
	(Note 1) Loading Gear (Right) Ass'y	A-6750-281-A				□				□			4-22
	(Note 1) Worm Gear (Cam Motor Ass'y)	3-733-395-01				□				□			3-5
	(Note 1) Worm Gear (Cassette Compartment)	3-736-100-01				□				□			3-5
	(Note 1) Shuttle Slide Surface	—				□				□			3-5
Check Performance	Abnormal-noise	—	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	—
	S side Tape Tension Measurement	—		◇		◇		◇		◇		◇	5-2,5-2
	Reel Table torque Measurement	—				◇				◇			5-1

Note 1 : Grease the VTR according to Sec. 3-5.

Note 2 : The period shown in the table is not a guarantee value. The parts replacement period differs depending on the environment in which the VTR is used, so take the operating environment into consideration when drawing up a maintenance and check plan.

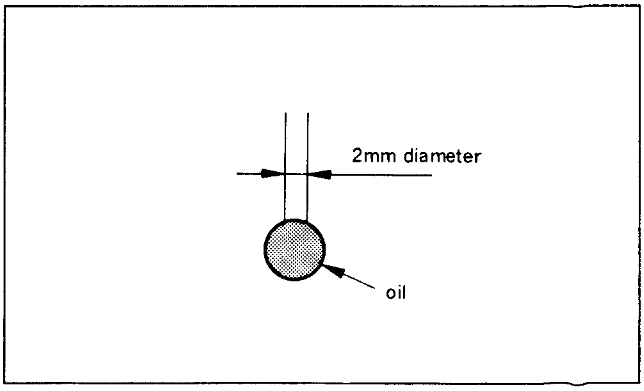
Note 3 : Be sure to clean the tape run surface after repairing it.

3-4. OILING

Oiling is described in 「SECTION 4. REPLACEMENT OF MAJOR PART」 for the applicable parts.

(1) Sony oil

- Be sure to use Sony oil. (If another brand of oil is used, the viscosity will be different, leading to trouble.)
  Sony oil : Sony part No. 7-661-018-18
- Be sure that the Sony oil used to lubricate the bearings is free of dirt and other foreign matter. (If the oil contains dirt, the bearings are liable to seize and also wear will be accelerated.)
- One drop of oil means a drop on the end of a rod of 2mm diameter (see figure).



3-5. GREASING

(1) Periodically grease the following parts.
- The face that slides against the cam of the pinch roller block ass'y (Fig. 1)
- The face that slides against the loading gear (right) ass'y (Fig. 2)
- The face that slides against the shuttle (left)/(right) ass'y (Fig. 3)
- Cam motor ass'y worm gear (Fig. 4)
- Cassette compartment worm gear (Fig. 5)

(2) Greasing
- Be sure to use the specified grease.
  MOLYKOTE grease EM-30LG (Color : green) :
  Sony part No. J-6090-014-A
  or
  MOLYKOTE grease EM-30L (Color : Colorless) :
  DOW CORNING Corp.

Apply a small quantity of grease to the areas marked in the figure (shaded areas and other areas indicated by the arrows).

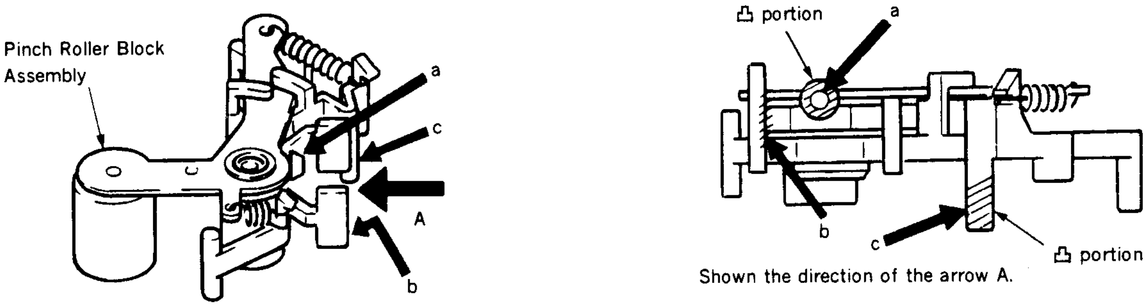

Pinch Roller Block Assembly
a
c
A
b
凸 portion
a
b
c
凸 portion
Shown the direction of the arrow A.

Fig. 1

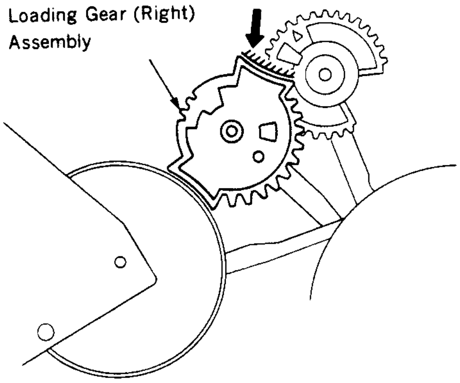

Loading Gear (Right) Assembly

Fig. 2

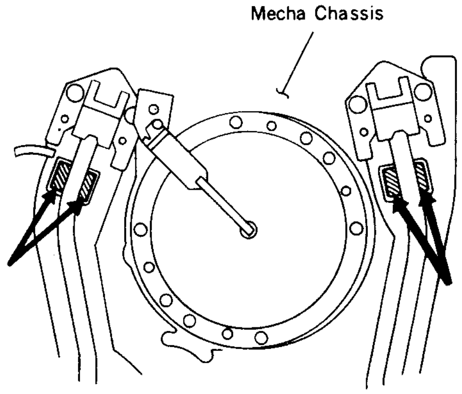

Mecha Chassis

Fig. 3

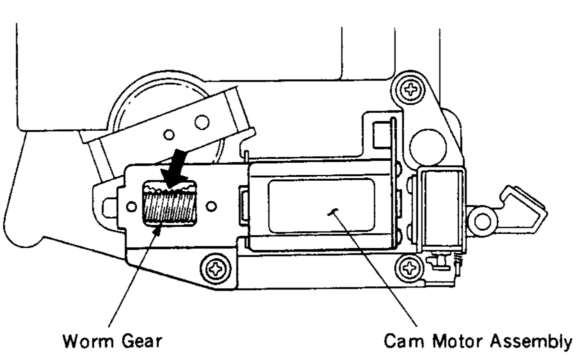

Worm Gear
Cam Motor Assembly

Fig. 4

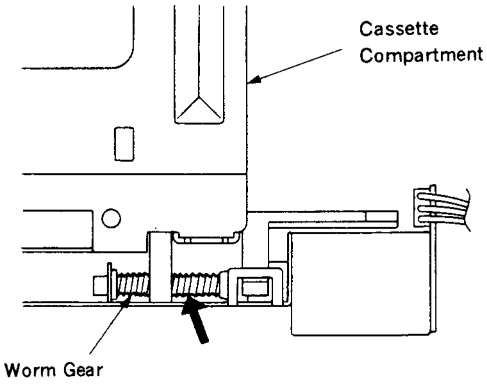

Cassette Compartment
Worm Gear

Fig. 5

SECTION 4
REPLACEMENT OF MAJOR PART

- Refer to Sec. 2 for details of removing the externals and the printed circuit boards.
- Re-install the various parts in the opposite sequence to removal, while referring to "Note on Installation".

4-1. PREPARATIONS FOR REPLACING PARTS

- Do not load or thread a cassette when the VTR is inverted.

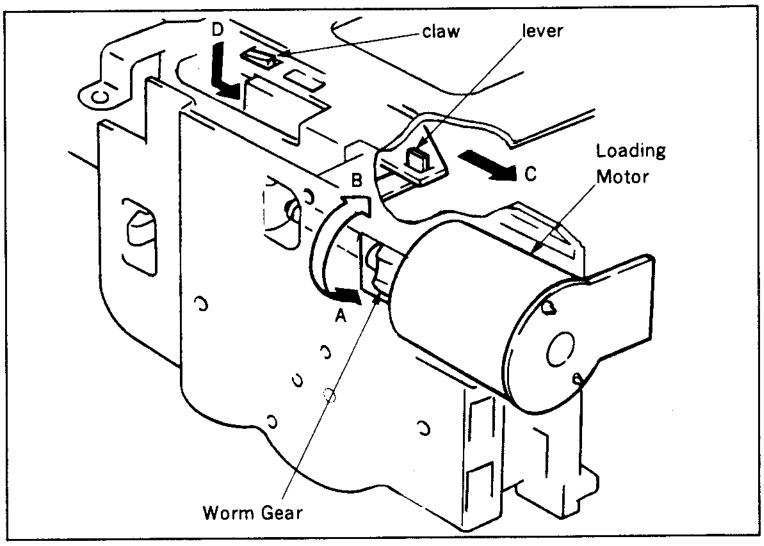
4-1-1. Method of loading and unloading the cassette compartment when the power is OFF

[Loading]

- Push the lever in the direction of arrow C and release the claw (direction of arrow D), then rotate the worm gear in the direction of arrow B manually until loading is completed.
  (When a cassette tape is loaded in the cassette compartment, the claw will automatically release.)

[Unloading]

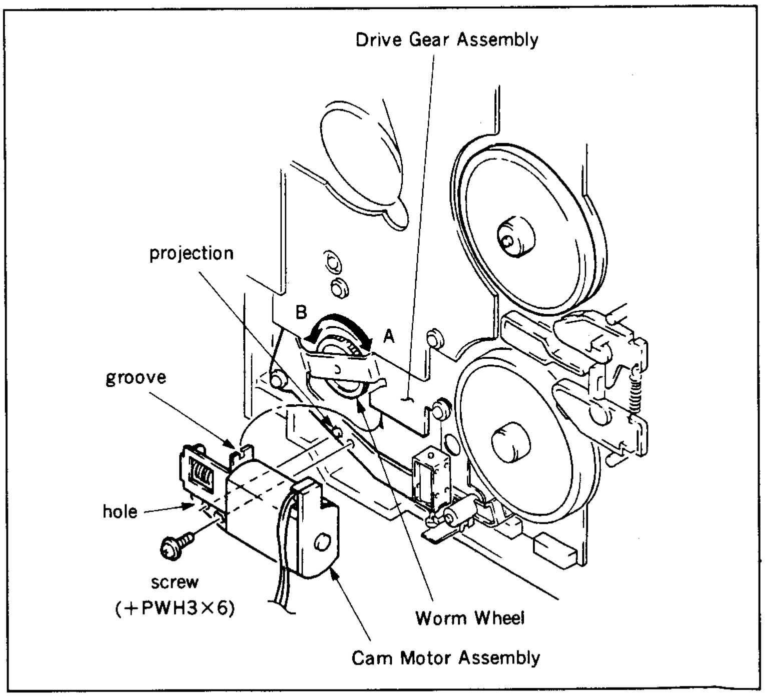
- Rotate the worm gear in the direction of arrow A manually until unloading is completed.


D
claw
lever
Loading Motor
B
C
A
Worm Gear

4-1-2. Method of threading and unthreading when the power is OFF

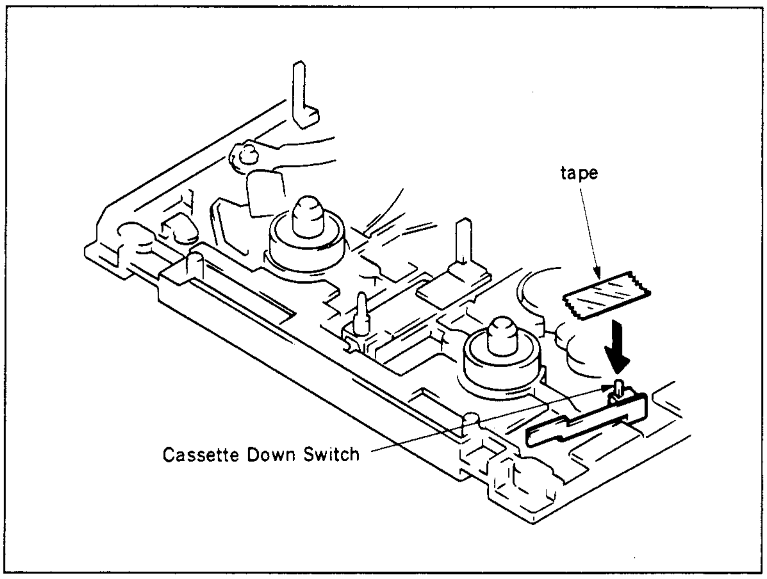
(1) Remove the screws, then remove the cam motor ass'y from the drive gear ass'y.
[Threading]
- Rotate the worm wheel manually in the direction of arrow A until threading is completed.

[Unthreading]
- Rotate the worm wheel manually in the direction of arrow B until unthreading is completed.


Drive Gear Assembly
projection
B
A
groove
hole
screw
(+PWH3×6)
Worm Wheel
Cam Motor Assembly

4-1-3. Method of operating the VTR without a cassette compartment or cassette tape

(1) Remove the cassette compartment according to Sec. 2-2.
(2) Turn ON No. 8 switch of DIP switch S101/SS-49 board (J-9). (This is to neutralize the tape top/end sensor function)
(3) Push down the CASSETTE DOWN switch with tape, etc.
(4) Turn the POWER switch ON.



In this condition, the VTR can be also operated by the remote controller (SVRM-100, RM-V200, RM-V100, etc.)

Note: Be sure to turn No. 8 switch OFF after completion of operation.

[Operating the VTR with the cassette compartment removed and a cassette tape loaded]

- Be sure to turn OFF No. 8 switch of DIP switch S101.
  (If the DIP switch is turned ON, the tape will not stop at the tape top/end, resulting in possible damage to the head tip and deformation of the tape guide.)

4-1-4. How to get the best engaging phase of gears when replacing

A hole and/or a mark is added on each gear in this mechanism deck so that the engaging phases of the gears are easy to get when assembling. When replacing gear, install it as shown below, also refer the figure 1 and 2. (The replacement should be performed on the STOP mode.)

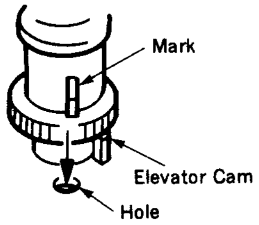
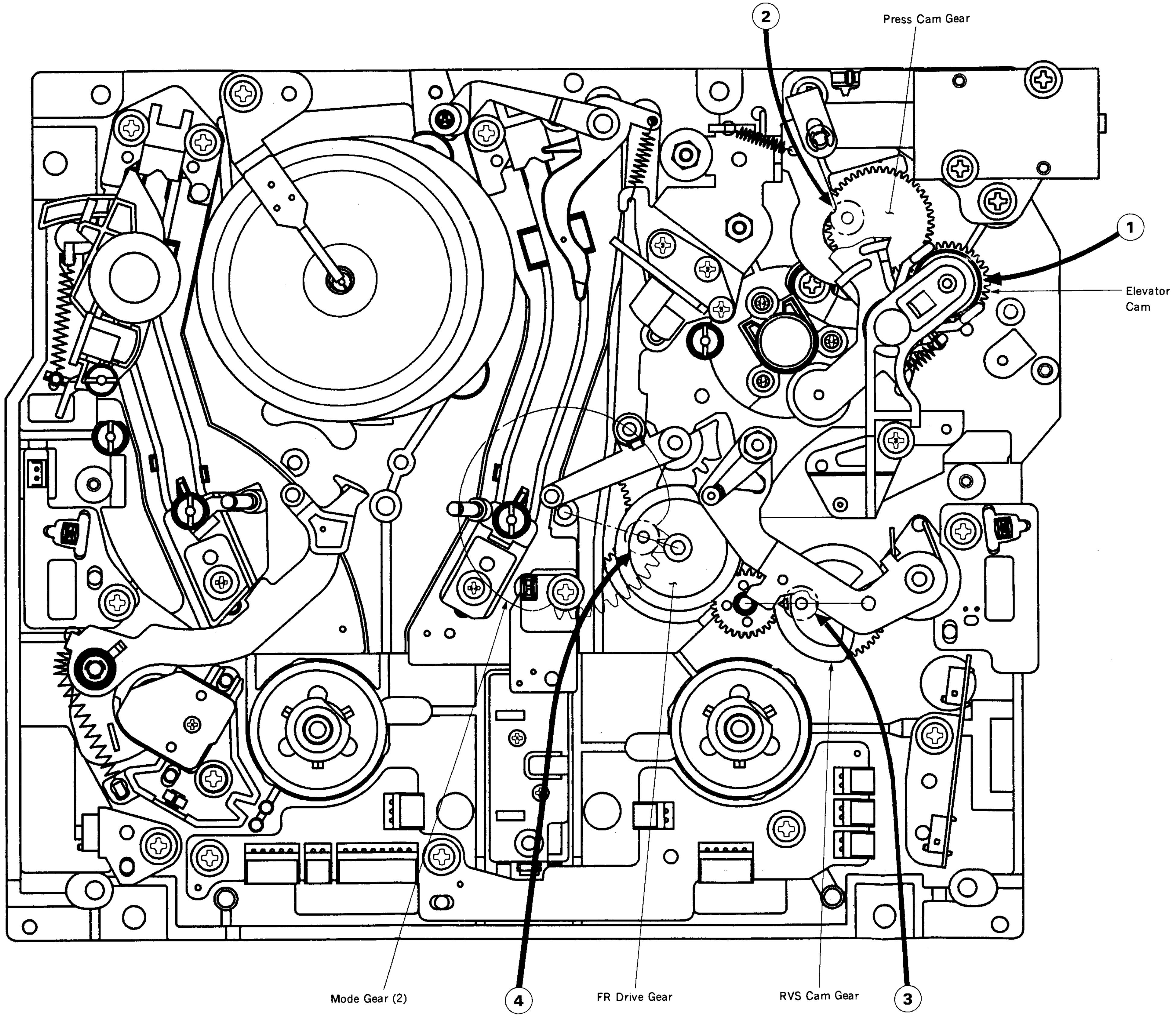
①	 Mark Elevator Cam Hole Match the mark of the elevator cam and the hole of the chassis. (Ref. 4-13)
②	Match the holes of the pressure cam gear and the chassis. (Ref. 4-13)
③	Match the holes of RVS cam gear and the chassis. (Ref. 4-14)
④	Match the holes of FR drive gear and the mode gear (2). (Ref. 4-16)

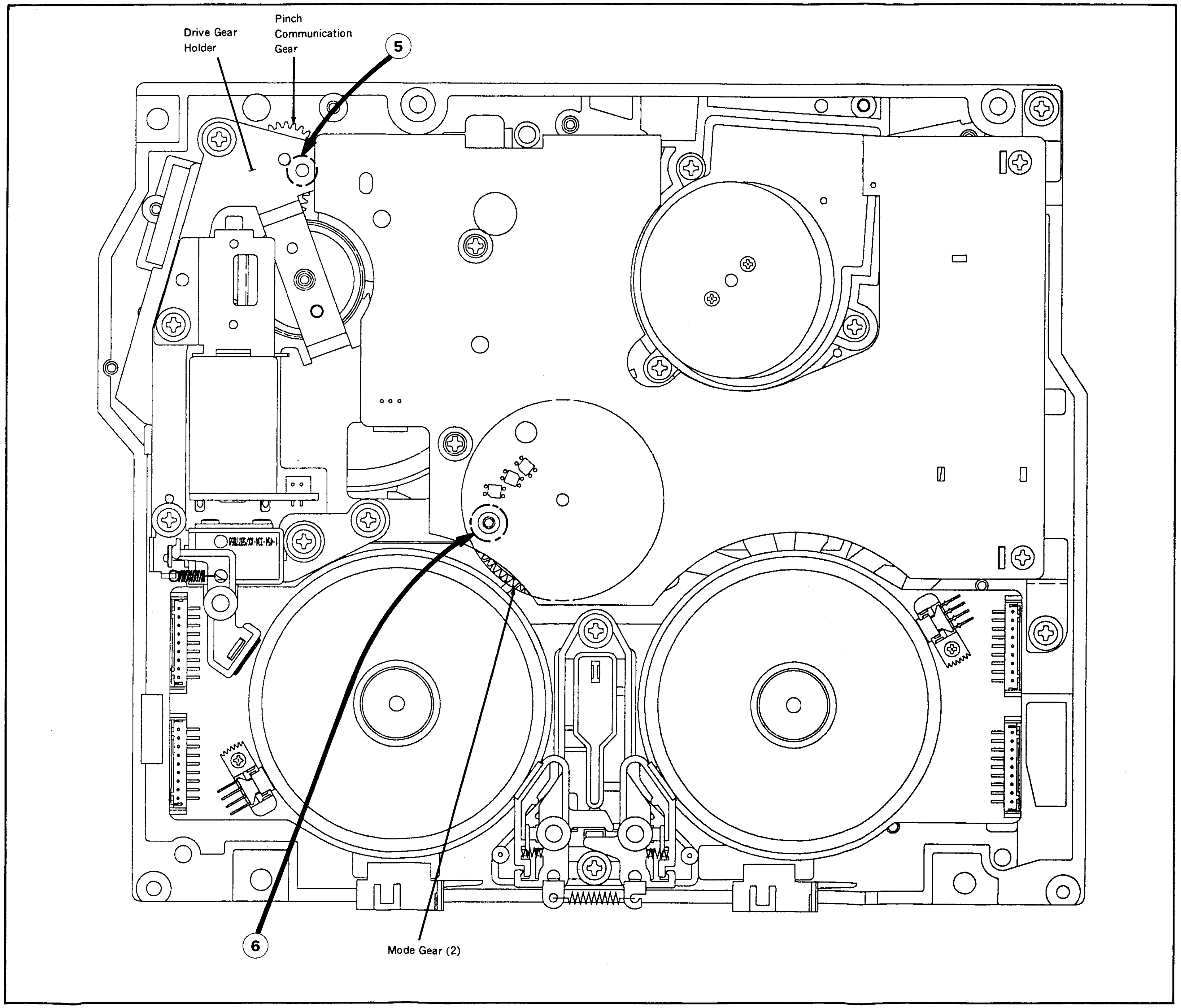
Figure of mechanism : STOP mode without the cassette compartment.



②
Press Cam Gear
①
Elevator Cam
Mode Gear (2)
④
FR Drive Gear
RVS Cam Gear
③

Fig. 1 Top View

Figure of mechanism : STOP mode


Drive Gear Holder
Pinch Communication Gear
5
6
Mode Gear (2)

⑤	Match the holes of the pinch communication gear and the drive gear holder. (Ref. 4-20)
⑥	Match the holes of the mode gear (2) and the drive gear holder. (Ref. 4-20)

Fig. 2 Bottom View

4-2. CASSETTE COMPARTMENT (FL ASS'Y) REPLACEMENT

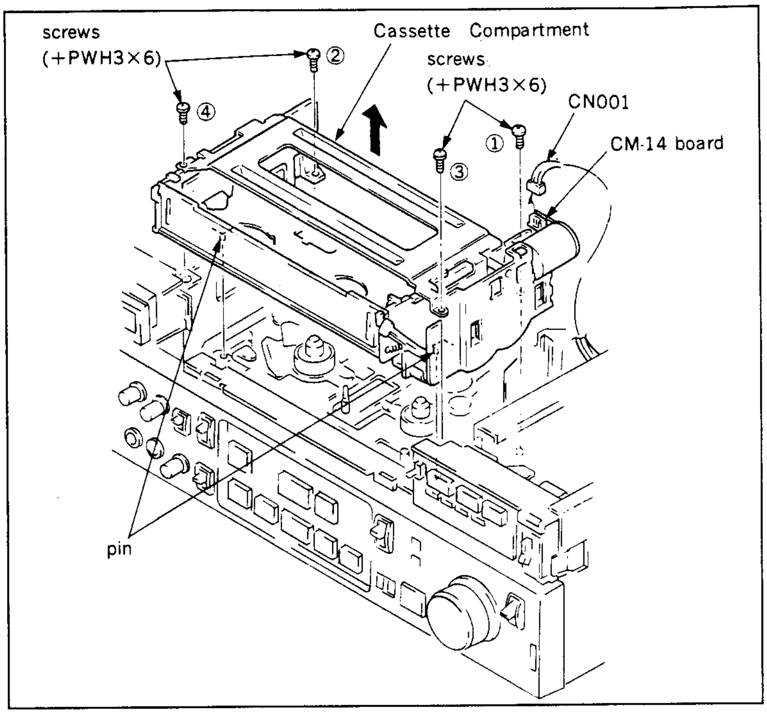
(1) Disconnect connector CN001 from the CM-14 board.

(2) Remove the four screws, and remove the cassette compartment (FL ass'y) in the direction of the arrow.

Note on installation

①Align the two pins of the cassette compartment with the holes in the base plate.

②Tighten the screws in the order of Steps ① to ④.


screws
(+PWH3×6)
②
④
Cassette Compartment
screws
(+PWH3×6)
①
③
CN001
CM-14 board
pin

4-2-1. Prevention lever replacement

(1) Remove the spring.

(2) Remove the claw, and move the prevention lever in the direction of arrow A.

(3) Remove the prevention lever in the direction of arrow B.

Note on installation

①The shaft of the prevention lever must enter the groove in the drive arm (left). (Fig. 2)

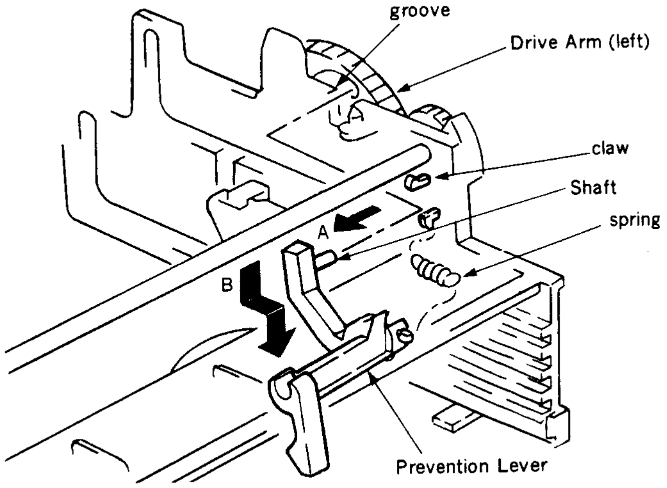

groove
Drive Arm (left)
claw
Shaft
spring
A
B
Prevention Lever

Fig. 1

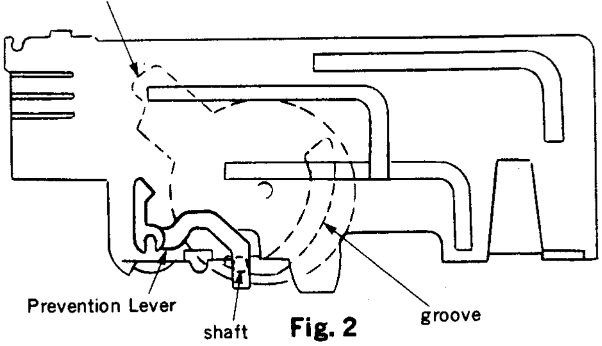

Drive Arm (left)
Prevention Lever
shaft
groove

Fig. 2

4-2-2. Loading motor, worm gear (FL), worm wheel (FL) and worm retainer replacement

(1) Remove the four claws, then remove the gear cover ass'y. (Fig. 1)
(2) Remove the stop washer 3, then pull out the worm wheel (FL). (Fig. 2)
(3) Remove the two screws, then remove the loading motor. (Fig. 2)
(4) Remove the worm gear (FL) and the worm retainer. (Fig. 2)

Note on installation

①To install the gear cover ass'y, obtain a shaft of 2mm diameter and length of at least 30mm. Pass the shaft through the holes in the gear cover ass'y, worm wheel (FL), drive arm (right) ass'y and right side plate, and engage the gear cover ass'y with the claw.

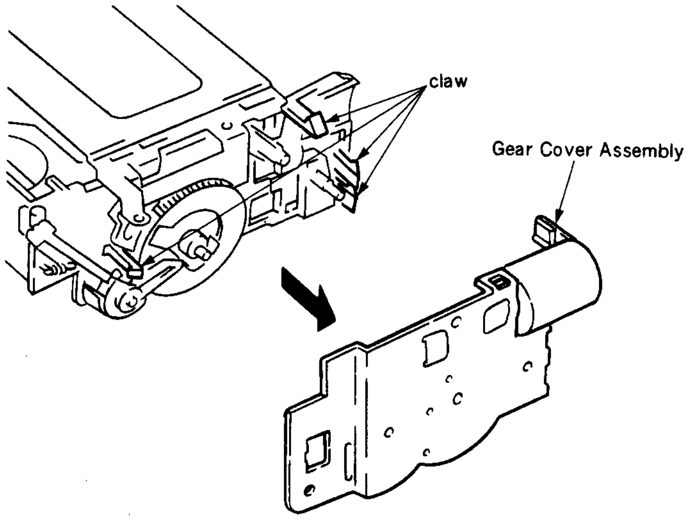

claw
Gear Cover Assembly

Fig. 1

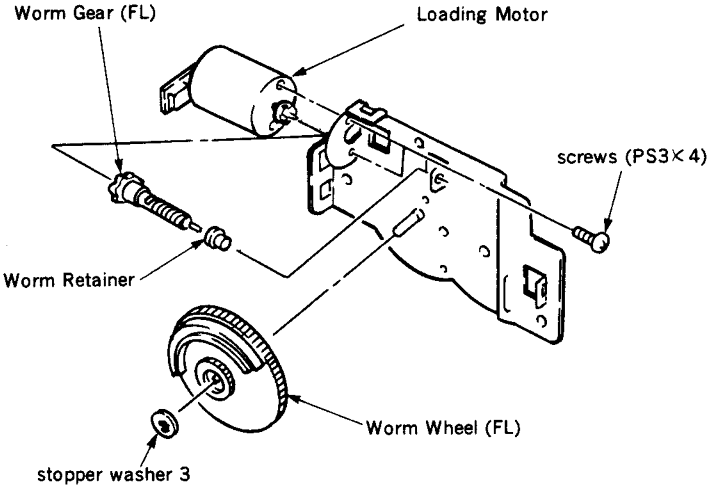

Worm Gear (FL)
Loading Motor
screws (PS3×4)
Worm Retainer
Worm Wheel (FL)
stopper washer 3

Fig. 2

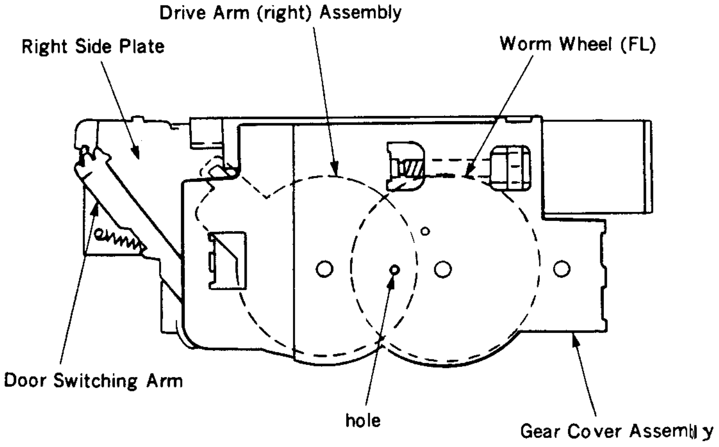
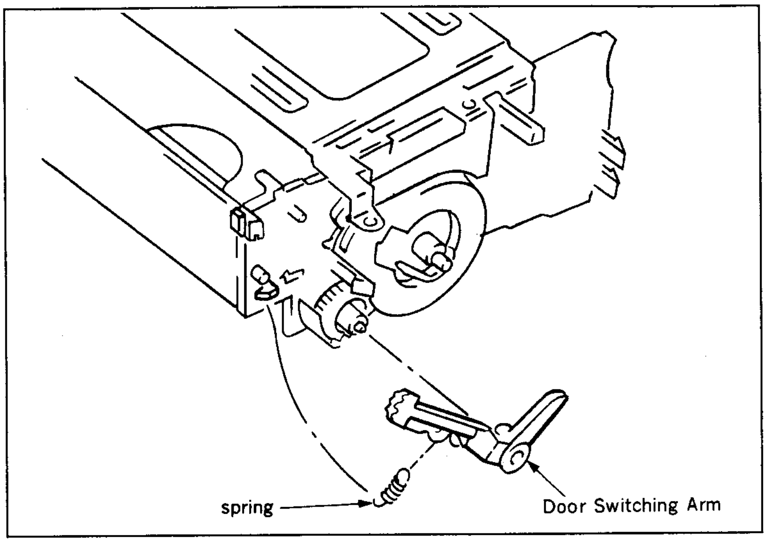

Drive Arm (right) Assembly
Right Side Plate
Worm Wheel (FL)
Door Switching Arm
hole
Gear Cover Assembly

Fig. 3

4-2-3. Door switching arm replacement

(1) Remove the spring.
(2) Pull out the door switching arm.


spring
Door Switching Arm

4-3. BC ROLLER ASS'Y REPLACEMENT

(1) Remove the spring from the notch in the ACE head base.
(2) Remove the stop washer (4 mm dia.), then remove the BC roller ass'y. (Fig. 1)

Note on installation

①Ensure that the opening of the hook is uppermost. (Fig. 2)
②Take care not to scratch the drum.
③Install the BC roller ass'y in such a way that the extremity enters the part of the shuttle holder indicated by the arrow in Fig. 2.

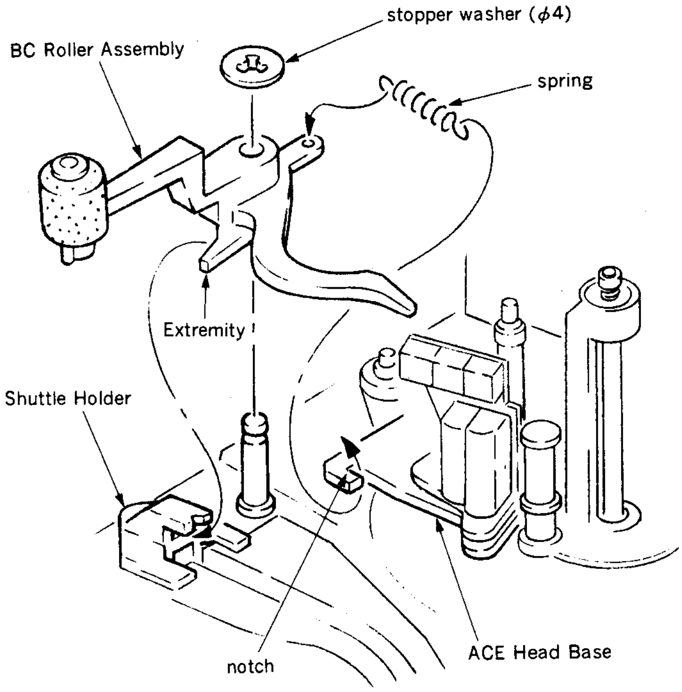

stopper washer (ϕ4)
BC Roller Assembly
spring
Extremity
Shuttle Holder
notch
ACE Head Base

Fig. 1

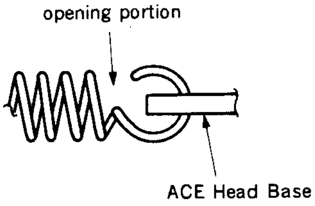

opening portion
ACE Head Base

Fig. 2

4-4. UPPER DRUM ASS'Y REPLACEMENT

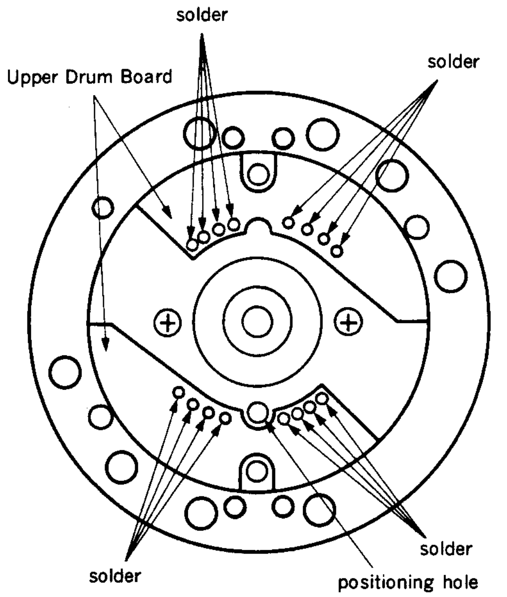
Tools :
Alignment tape (KRV-4821PSA)
Alignment tape (KRV-45HPS)
Alignment tape (JVC-MH-2)
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Box screwdriver (width 5.5mm)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Oscilloscope
Connecting cable (Refer to Sec. 6-9)
S-VHS cassette tape (T-160 and T-120)

(1) Remove the screw, then remove the shaft ground ass'y.
(2) Unsolder the sixteen points on the upper drum board shown in Fig. 1.
(3) Remove the two screws, then remove the upper drum ass'y.

Note on installation

①Do not touch the head tip and the contact of the shaft ground ass'y manually or a tool.
②Clean the surface of the drum shaft that touches the contact of the shaft ground ass'y, using cleaning fluid.
③Install the contact of the shaft ground ass'y at roughly the center of the drum shaft.
④Align the locating hole of the upper drum ass'y with this of the lower drum ass'y, then install the upper drum ass'y.
⑤The tightening torque for installing the upper drum ass'y must be 590×10^{-3}N•m (6kg•cm).

[**Adjustment after replacing the upper drum ass'y**]
• See next page.


solder
Upper Drum Board
solder
solder
solder
positioning hole

Upper Drum Assembly (Top View)

Fig. 1

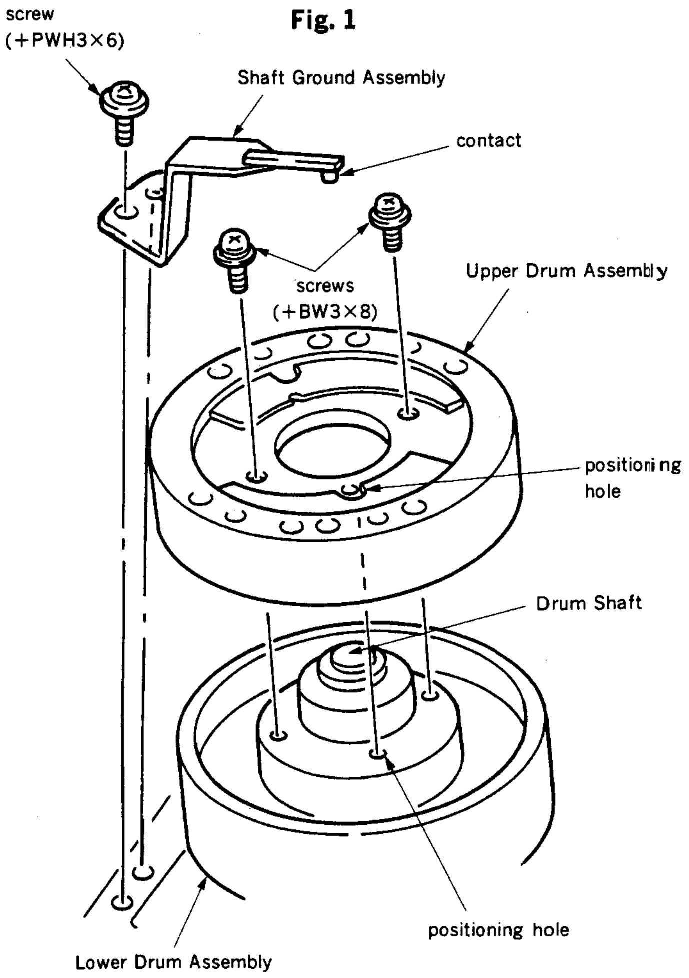
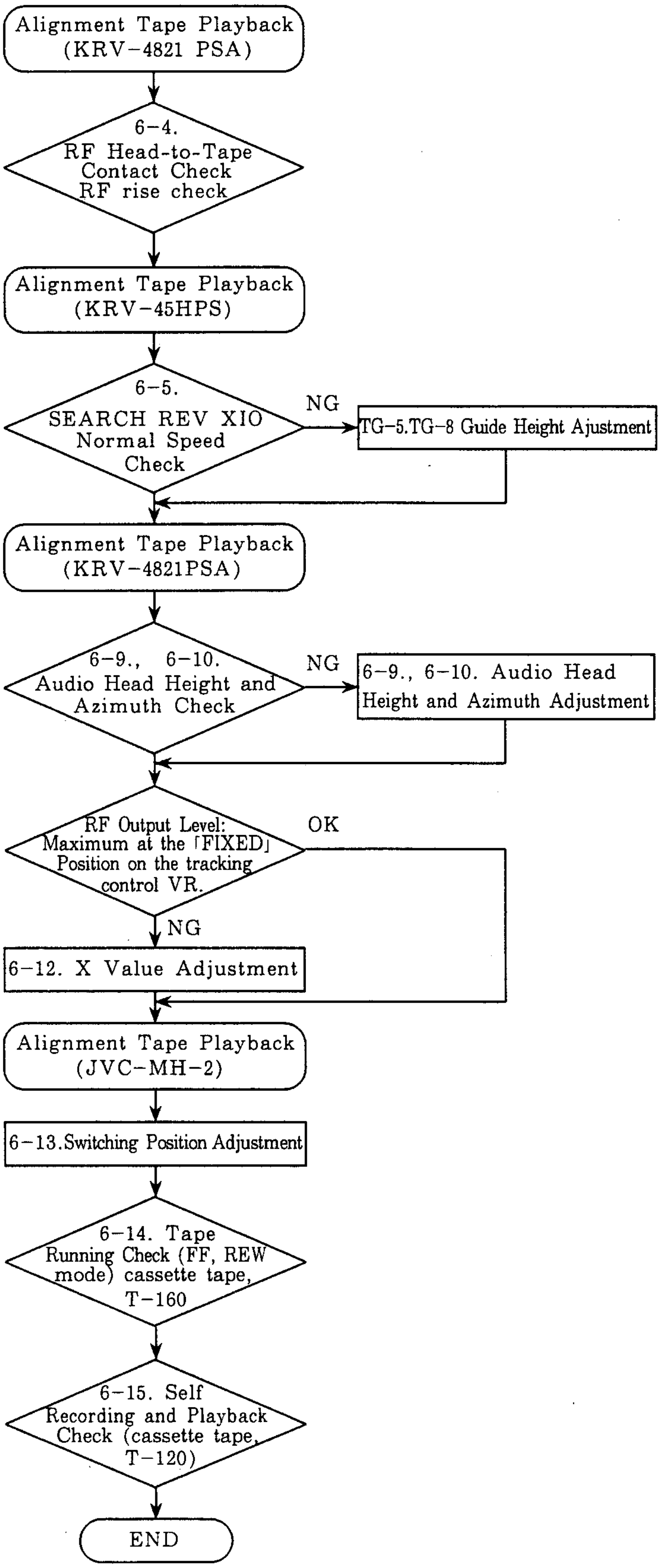

screw
(+PWH3×6)
Shaft Ground Assembly
contact
screws
(+BW3×8)
Upper Drum Assembly
positioning hole
Drum Shaft
positioning hole
Lower Drum Assembly

Fig. 2

[Adjustment after replacing the upper drum ass'y]

- Refer to Section 6, perform the Tape Run Alignments.


Alignment Tape Playback (KRV−4821 PSA)
6−4. RF Head-to-Tape Contact Check RF rise check
Alignment Tape Playback (KRV−45HPS)
6−5. SEARCH REV X10 Normal Speed Check
NG
TG−5.TG−8 Guide Height Ajustment
Alignment Tape Playback (KRV−4821PSA)
6−9., 6−10. Audio Head Height and Azimuth Check
NG
6−9., 6−10. Audio Head Height and Azimuth Adjustment
RF Output Level: Maximum at the「FIXED」Position on the tracking control VR.
OK
NG
6−12. X Value Adjustment
Alignment Tape Playback (JVC−MH−2)
6−13.Switching Position Adjustment
6−14. Tape Running Check (FF, REW mode) cassette tape, T−160
6−15. Self Recording and Playback Check (cassette tape, T−120)
END

4-5. DRUM ASS'Y REPLACEMENT

Tools :
Alignment tape (KRV-4821PSA)
Alignment tape (KRV-45HPS)
Alignment tape (JVC-MH-2)
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Box screwdriver (width 5.5mm)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Oscilloscope
Connecting cable (See Sec. 6-9.)
S-VHS cassette tape (T-160 and T-120)

(1) Remove the drum harness from the RP board. (Fig. 1)
(2) Remove the screw, then remove the shaft ground ass'y. (Fig. 2)
(3) Disconnect connector CN604 from the drum ass'y. (Fig. 2)
(4) Remove the three screws, then remove the drum ass'y. (Fig. 2)

Note on installation

①Do not touch the head tip and the contact of the shaft ground ass'y manually or a tool.

②Clean the following parts with cleaning fluid.
- The surface of the drum shaft that touches the ground contact of shaft ground assembly.
- The mounting faces of the drum ass'y and the chassis.
- The surface of the drum ass'y over which the tape travels

③Align the holes (two) in the drum ass'y with the pins (two) on the chassis, then install the drum ass'y.

④The tightening torque of the mounting screws of the drum ass'y must be 392×10^{-3} to 490×10^{-3} N•m (4 to 5 kg•cm).

⑤Connect the drum harness to the RP board while being careful of the direction of the conductor side.

[**Adjustment after Replacing the Drum Ass'y**]
See Sec. 4-4. [Same as the method of performing adjustment after replacing the upper drum ass'y]

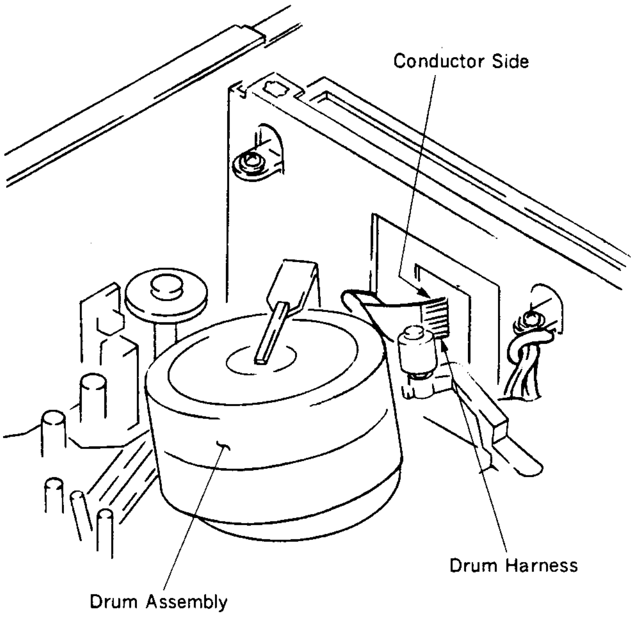


Fig. 1

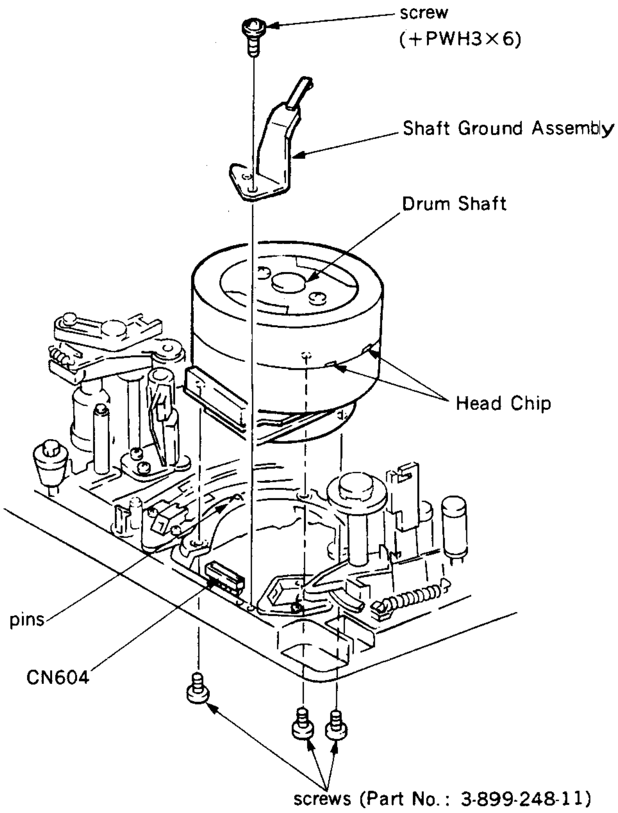


Fig. 2

4-6. TG-1 GUIDE REPLACEMENT

Tools:

Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Loosen the set screw by inserting the hex wrench into the hole in the chassis (left). (Fig. 1)
(3) Rotate the TG-1 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

[Installation and height adjustment]

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it against the TG-1 guide from the direction shown in the drawing, and tighten the set screw until the lower flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Set screw tightening torque: 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))
(6) Turn the flange of the guide with the guide adjustment screwdriver until the required specification is satisfied. (Fig. 3)
(7) Perform tape run adjustment of Sec. 6.

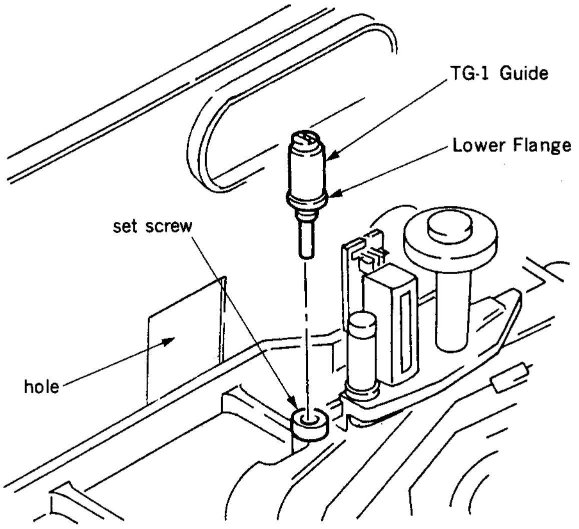

TG-1 Guide
Lower Flange
set screw
hole

Fig. 1

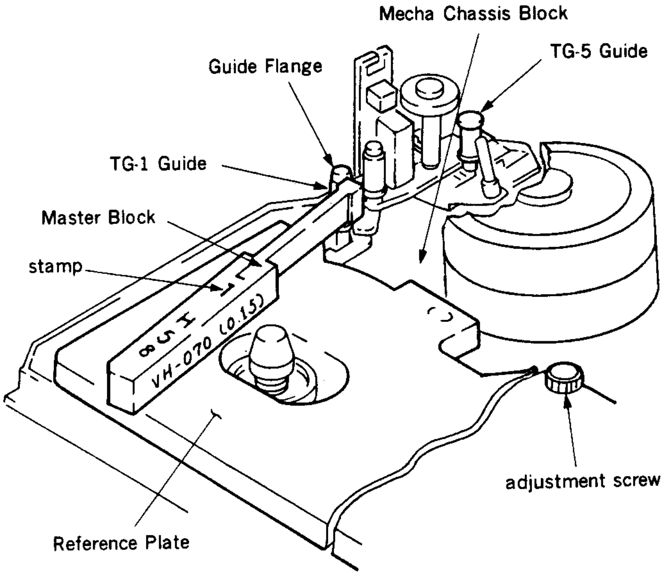
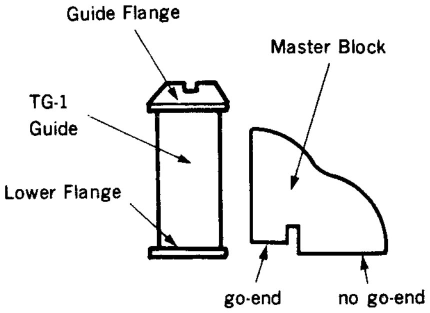

Mecha Chassis Block
TG-5 Guide
Guide Flange
TG-1 Guide
Master Block
stamp
VH-070 (0.15)
adjustment screw
Reference Plate

Fig. 2


Guide Flange
Master Block
TG-1 Guide
Lower Flange
go-end
no go-end

Spec.:
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

Fig. 3

4-7. TENSION REGULATOR ASS'Y (TG-2 GUIDE) AND STD ASS'Y REPLACEMENT

Tools :
Oscilloscope
Tentelometer (T2-H7-UMC)
Digital voltmeter
S-VHS cassette tape (T-120)
Sony oil (7-661-018-18)
Locking compound

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Disconnect connector CN657Y from the HN-160 board.
(3) Remove the spring from the STD ass'y.
(4) Remove stop washer 2.3 and also the screw.
(5) Remove the tension regulator ass'y and STD ass'y together.
(Take care not to lose the poly-slider-washer.)

Note on installation

①Clean the shaft with cleaning fluid, and apply 1/2 a drop of Sony oil. (Fig. 1)
②Insert the slit arm of the tension regulator ass'y into the slit in the STD ass'y, then install the resulting ass'y on the shaft. (Fig. 1)
③Align the U groove and longitudinal hole of the STD ass'y with bosses **a** on the chassis (Fig. 1), then install the STD ass'y in such a way that the adjustment groove comes to a point mid-way between bosses **b**. (Fig. 2)

[**Adjustment after replacement**]

Mechanical adjustment of position of tension regulator ass'y

(1) Connect the oscilloscope as follows.
CH-1 (DC range) : TP301/SS-49 board (C-9)
(2) Turn ON No. 8 switch of DIP switch S101/SS-49 board (J-9). (Fig. 3)
(3) Keep the cassette down switch pressed down with finger. (Fig. 3)
(4) Turn ON the POWER switch.
(5) Press the PLAY button of the unit for the threading completion mode (rotate the drum).
(6) Remove a finger from the cassette down switch.

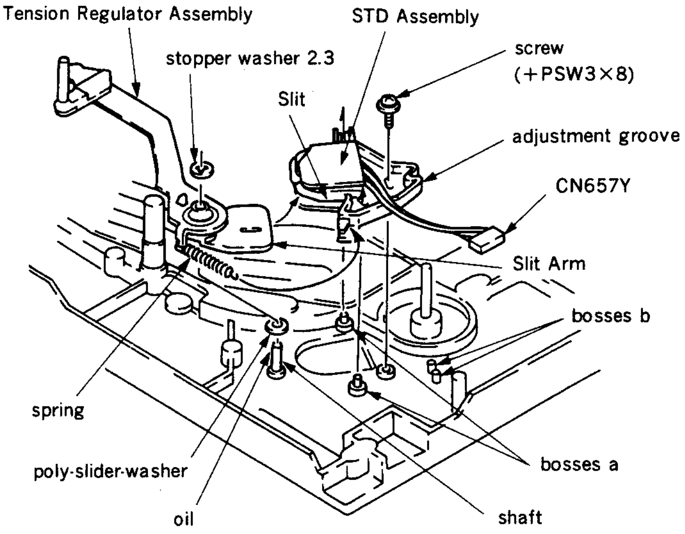

Tension Regulator Assembly
STD Assembly
stopper washer 2.3
Slit
screw
(+PSW3×8)
adjustment groove
CN657Y
Slit Arm
bosses b
spring
poly-slider-washer
oil
bosses a
shaft

Fig. 1

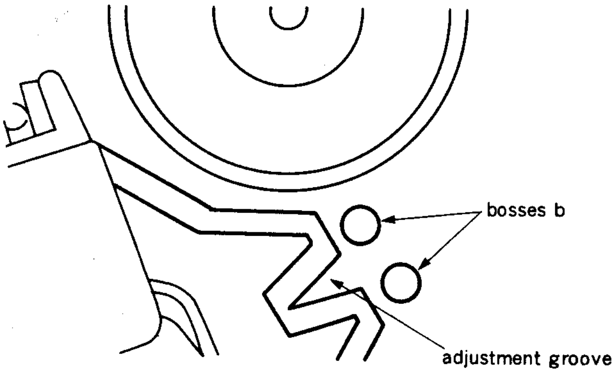

bosses b
adjustment groove

Fig. 2

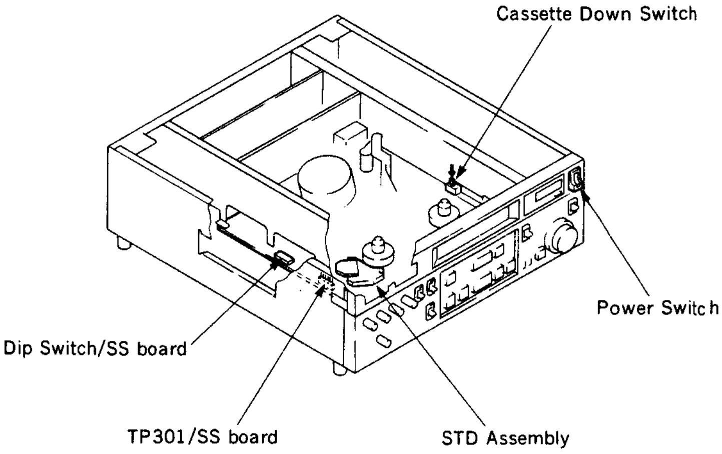

Cassette Down Switch
Power Switch
Dip Switch/SS board
TP301/SS board
STD Assembly

Fig. 3

(7) Loosen the screw of the STD ass'y by about 90°.

(8) Insert a screwdriver into the position shown in Fig. 4, then move the STD ass'y in the direction of arrows A and B, and set it to the position where the DC voltage of TP301 is minimum.

(9) Move the STD ass'y slightly in the direction of arrow C, and tighten the screw until the DC voltage of TP301 is within the specification range. (Fig. 4)

(10) Confirm that when the tension regulator ass'y is moved in the direction of the arrow D, the DC voltage of TP301 increases in direct proportion. (Fig. 5)

(11) Press the STOP button of the unit for the un-threading completion mode.

(12) Turn OFF No. 8 switch of the DIP switch.

(13) Smear the screw of the STD ass'y with locking compound. (Fig. 4)

Tape tension adjustment

(14) Perform tape tension adjustment according to Sec. 6-2.

Tape run adjustment

(15) Perform tape run adjustment of Sec. 6.

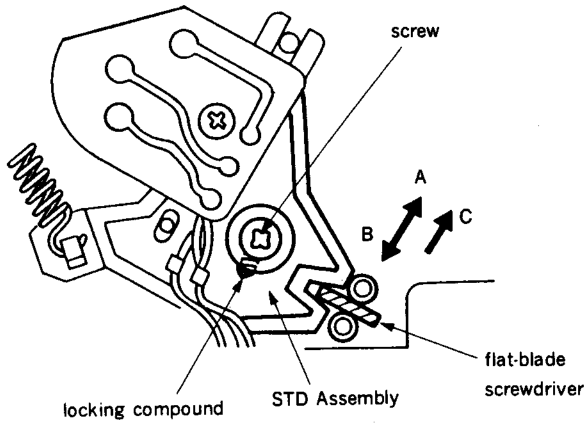
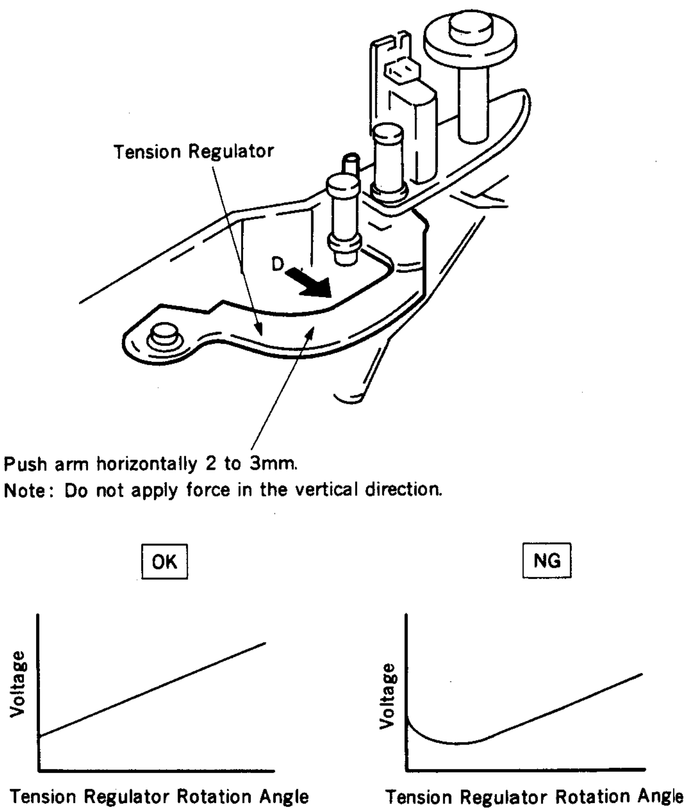

screw
A
B
C
flat-blade screwdriver
locking compound
STD Assembly

Fig. 4

Spec. :
DC voltage of TP301
min. to min.+0.2V


Tension Regulator
D
OK
NG
Voltage
Tension Regulator Rotation Angle
Voltage
Tension Regulator Rotation Angle

Push arm horizontally 2 to 3mm.
Note: Do not apply force in the vertical direction.

Fig. 5

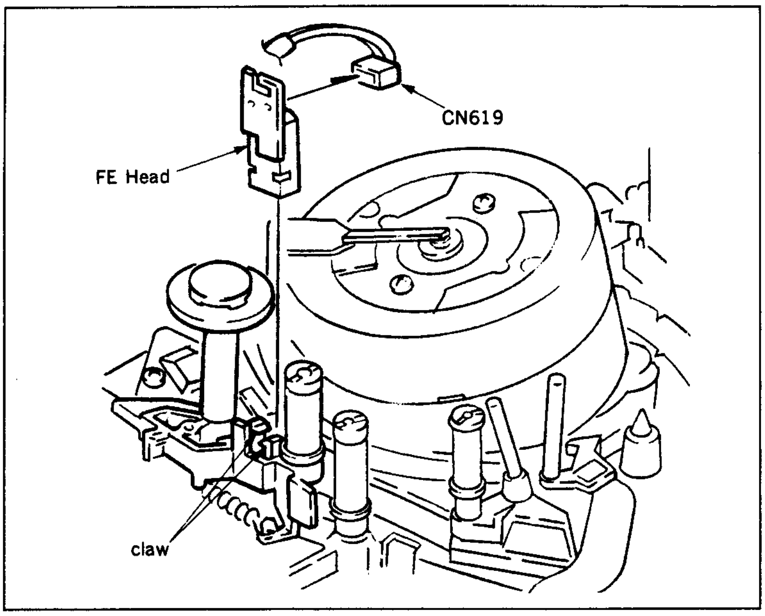
4-8. FE HEAD REPLACEMENT

(1) Disconnect connector CN619 from the head board.

(2) Remove the two claws, then remove the FE head.

Note on installation

①Push in the FE head until the two claws lock into place.



CN619
FE Head
claw

4-9. TAPE STABILIZER ASS'Y (TG-4 GUIDE) AND TG-3 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)

Master block (J-6380-700-A)

Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)

Remote controller (SVRM-100 or RM-V100 or RM-V200)

Sony oil (7-661-018-18)

(1) Remove the cassette compartment according to Sec. 4-2.

(2) Remove the FE head according to Sec. 4-8.

(3) Remove the tension coil spring.

(4) Remove stop washer 1.5, then remove the compression coil spring.

(5) Remove the tape stabilizer ass'y from the chassis.

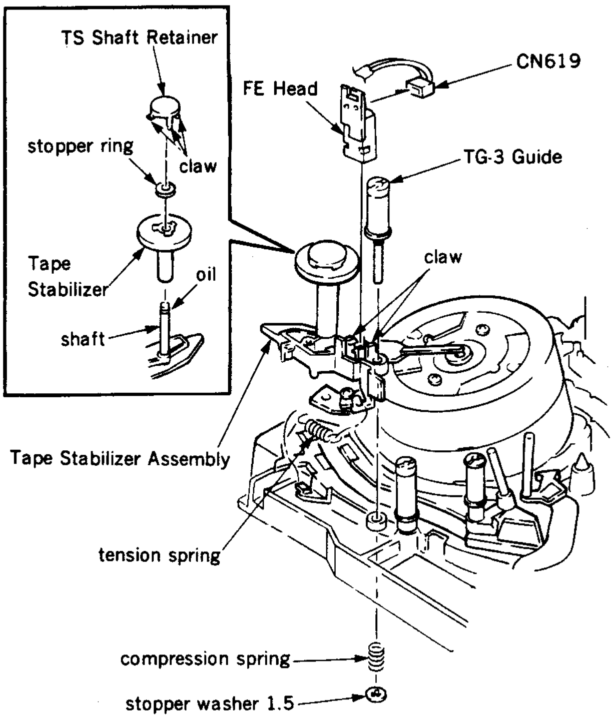
Tape stabilizer (TG-4 guide)

(6) Remove the three claws, then remove the TS shaft retainer.

(7) Remove the stop ring, then remove the tape stabilizer.

TG-3 guide

(8) Turn the TG-3 guide counterclockwise with a guide adjustment screwdriver, and remove it.



TS Shaft Retainer
stopper ring
claw
Tape Stabilizer
oil
shaft
FE Head
CN619
TG-3 Guide
claw
Tape Stabilizer Assembly
tension spring
compression spring
stopper washer 1.5

Fig. 1

Note on installation

①Clean the mounting shaft of the tape stabilizer with cleaning fluid, then apply 1/3 of a drop of Sony oil.

②Install the TG-3 guide to the height shown in Fig. 2.

[**Adjustment after replacement**]

TG-3 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) Set the master block with the stamped L3 face upward, then place it against the TG-3 guide from the direction shown in the drawing, and confirm that the height of the lower flange satisfies the specification. (Figs. 3 and 4)

If the specification is not satisfied

(6) Turn the flange of the TG-3 guide with the guide adjustment screwdriver.

(7) Perform tape run adjustment of Sec. 6.

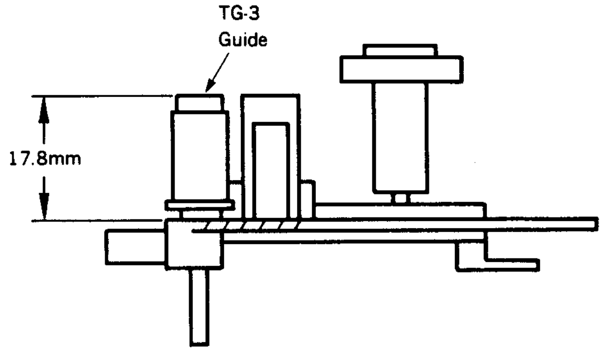

TG-3
Guide
17.8mm

Fig. 2

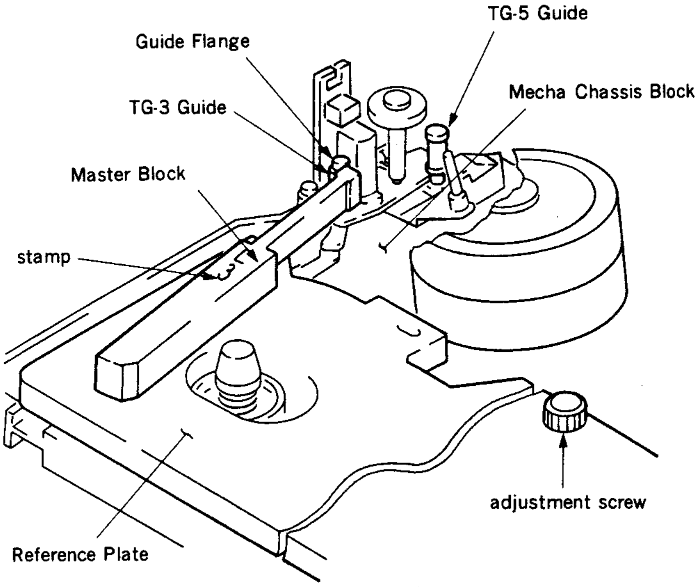

TG-5 Guide
Guide Flange
Mecha Chassis Block
TG-3 Guide
Master Block
stamp
adjustment screw
Reference Plate

Fig. 3

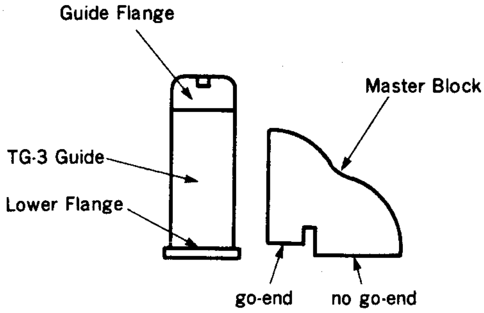

Guide Flange
Master Block
TG-3 Guide
Lower Flange
go-end
no go-end

Fig. 4

Spec. :
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

4-10. AUDIO HEAD ASS'Y REPLACEMENT

Tools :
Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Box screwdriver (width 5.5mm)
Thickness gauge (9-911-053-00)
Remote controller (SVRM-100 or RM-V100 or RM-V200)
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Disconnect connectors CN616, 617 and 618 from the AH board.
(3) Remove the tension coil spring A and B.
(4) Remove the AC adjustment screw.
(5) Remove the adjustment nut, then pull out the audio head ass'y.

Note on installing the audio head

①Insert part **a** of the torsion coil spring into the hole in the chassis, then insert part **b** into the bend in the ACE base ass'y. (Fig. 1)
②Smear grease onto the bend portion that the ACE base ass'y touch the AC adjustment screw. (Fig. 1)
③Install the audio head ass'y and the AC adjustment screw to the height shown in Fig. 3.

[**Adjustment after replacement**]

Audio head zenith adjustment

(1) Push the PLAY button of the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it gently against the audio head from the direction shown in the drawing (Fig. 2).

Caution : Take care not to damage the surface of the audio head.

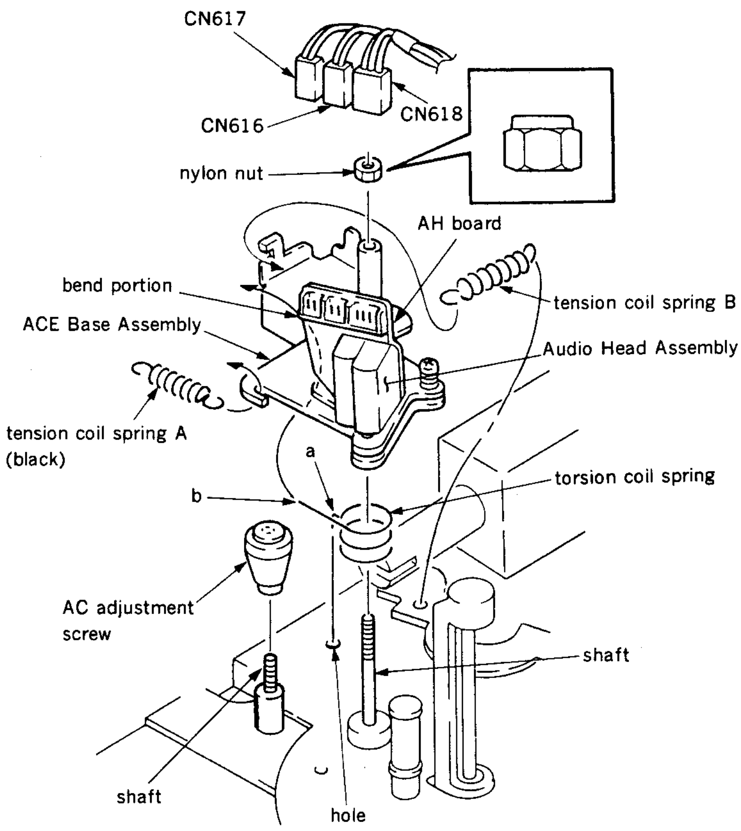

CN617
CN616
CN618
nylon nut
AH board
bend portion
ACE Base Assembly
tension coil spring B
Audio Head Assembly
tension coil spring A (black)
a
b
torsion coil spring
AC adjustment screw
shaft
shaft
hole

Fig. 1

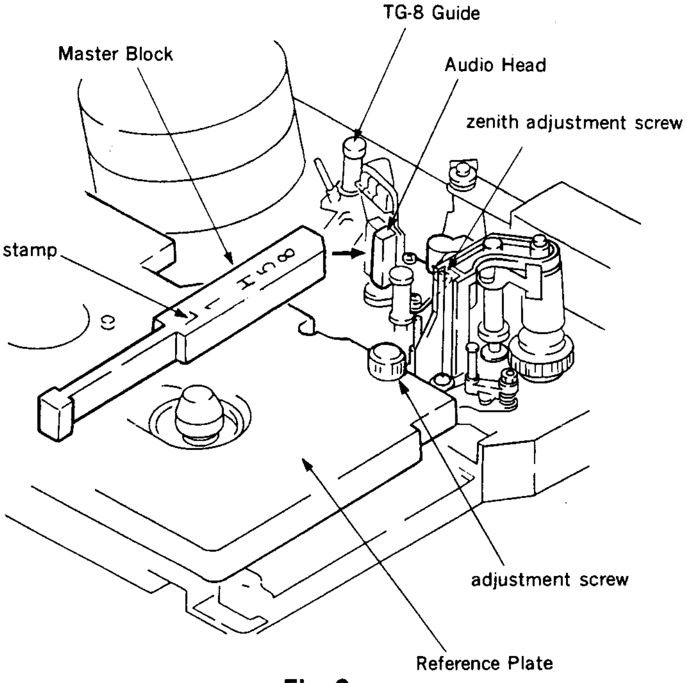

TG-8 Guide
Master Block
Audio Head
zenith adjustment screw
stamp
adjustment screw
Reference Plate

Fig. 2

(6) Tilt the head with the zenith adjustment screw until gap A satisfies the specification. (Fig. 4)

Audio head azimuth adjustment

(7) Change the orientation of the master block and place it against the side of the audio head from the direction shown in the drawing. (Fig. 5)

(8) Turn the azimuth adjustment screw so that gaps B and C satisfy the specification. (Fig. 6)

(9) Confirm that the zenith specification is satisfied.

If the specification is not satisfied

(10) Repeat the zenith and azimuth adjustments until the relevant specifications are satisfied.

Tape run adjustment

(11) Perform tape run adjustment of Sec. 6.

- Upon completion of adjustment, smear locking compound onto the AC adjustment screw, zenith adjustment screw and the azimuth adjustment screw. (Fig. 7)

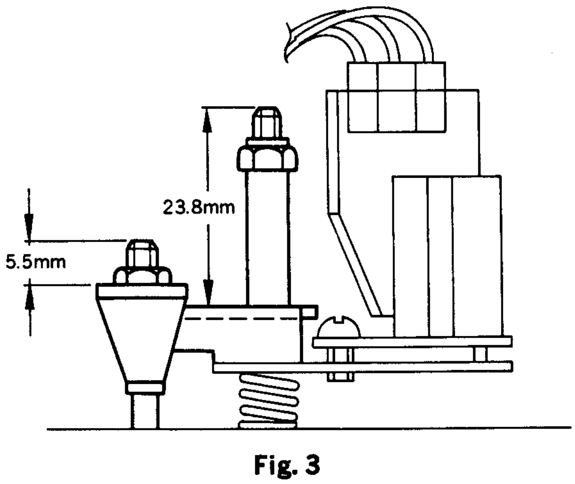


Fig. 3

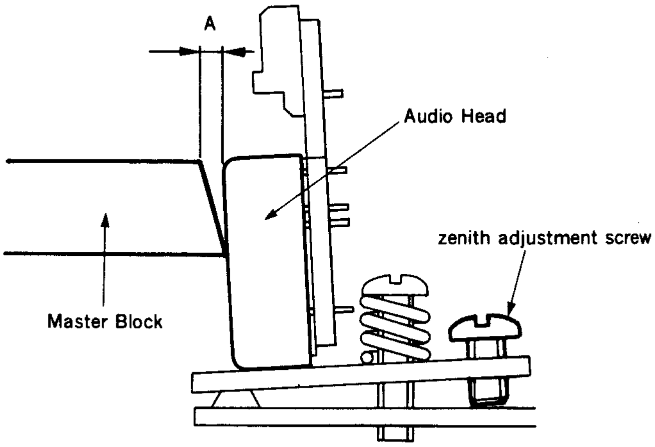

A
Audio Head
zenith adjustment screw
Master Block

Fig. 4

Spec. :
gap A=0 to 0.05mm

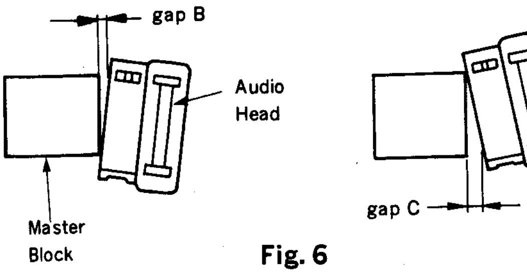

gap B
Audio Head
Master Block
gap C

Fig. 6

Spec. :
gap B, C=0 to 0.05mm

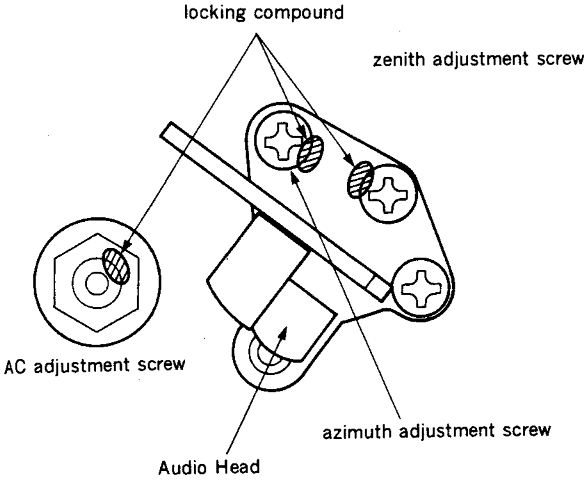

locking compound
zenith adjustment screw
AC adjustment screw
azimuth adjustment screw
Audio Head

Fig. 7

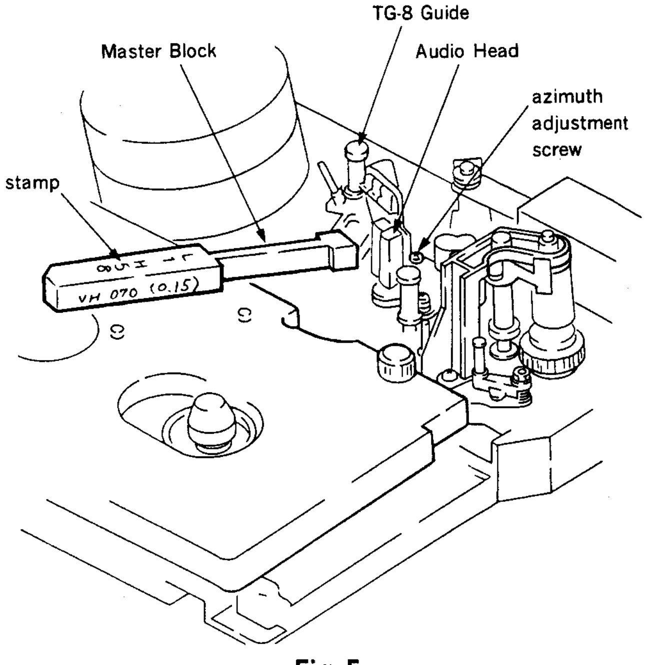

TG-8 Guide
Master Block
Audio Head
azimuth adjustment screw
stamp

Fig. 5

4-11. TG-9 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Loosen the set screw by the hex wrench. (Fig. 1)
(3) Rotate the TG-9 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

[Installation and height adjustment]

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it against the TG-9 guide from the direction shown in the drawing, and tighten the set screw until the lower flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Set screw tightening torque: 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))
(6) Turn the flange of the guide with the guide adjustment screwdriver until the required specification is satisfied. (Fig. 3)
(7) Perform tape run adjustment of Sec. 6.

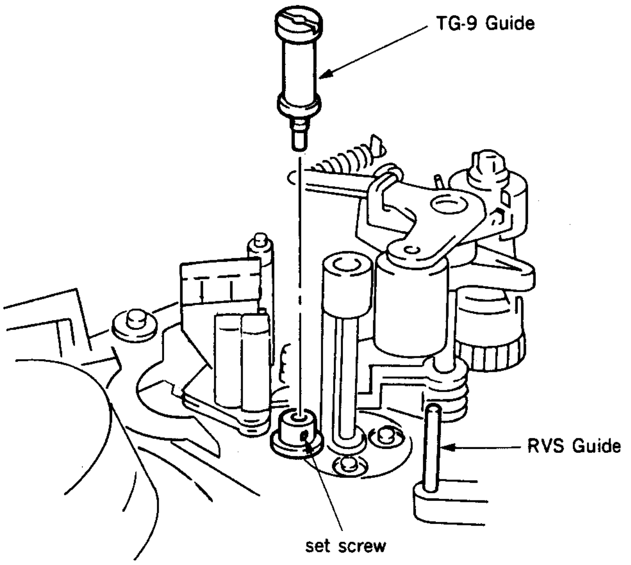

TG-9 Guide
RVS Guide
set screw

Fig. 1

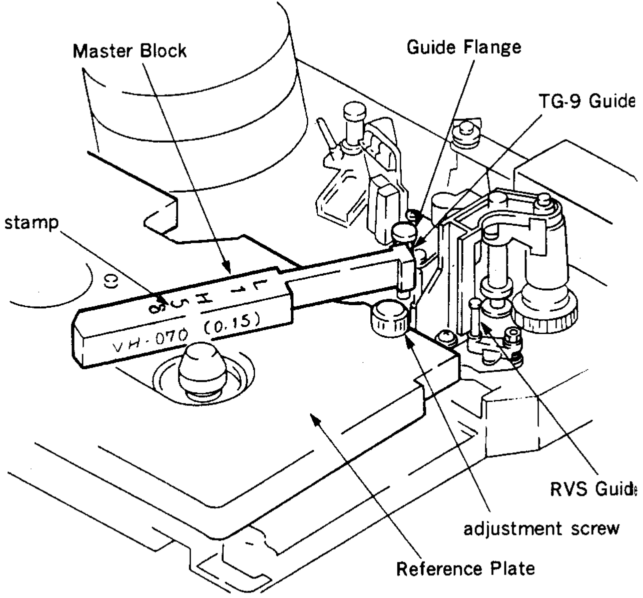

Master Block
Guide Flange
TG-9 Guide
stamp
L1
H5
VH-070 (0.15)
RVS Guide
adjustment screw
Reference Plate

Fig. 2

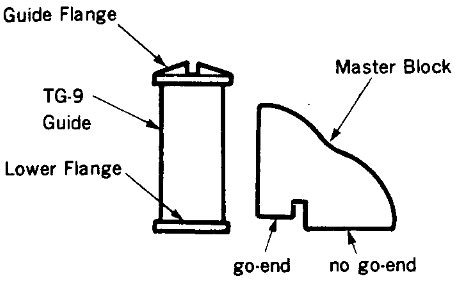

Guide Flange
TG-9
Guide
Lower Flange
Master Block
go-end
no go-end

Fig. 3

Spec. :
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

4-12. PINCH ROLLER BLOCK ASS'Y AND ELEVATOR CAM REPLACEMENT

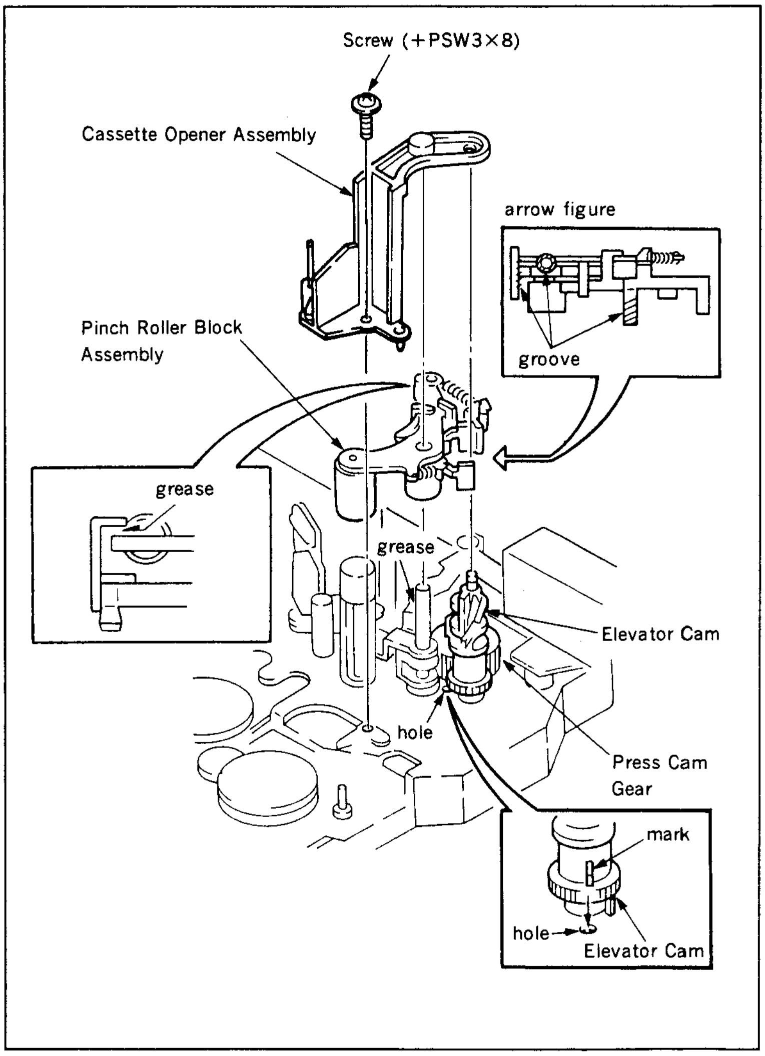
Tool:
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Remove the screw, then remove the cassette opener ass'y.
(2) Pull out the pinch roller block ass'y.
(3) Pull out the elevator cam.

Note on installation

①Align the mark on the elevator cam with the hole in the chassis, then engage the elevator cam with the press cam gear, and install it on the shaft. (As a result, the engagement phases of the elevator cam and press cam gear will coincide.)

②Smear the parts of the pinch roller block ass'y indicated by the arrows (five) with MOLYKOTE grease.


Screw (+PSW3×8)
Cassette Opener Assembly
arrow figure
groove
Pinch Roller Block Assembly
grease
grease
Elevator Cam
hole
Press Cam Gear
mark
hole
Elevator Cam

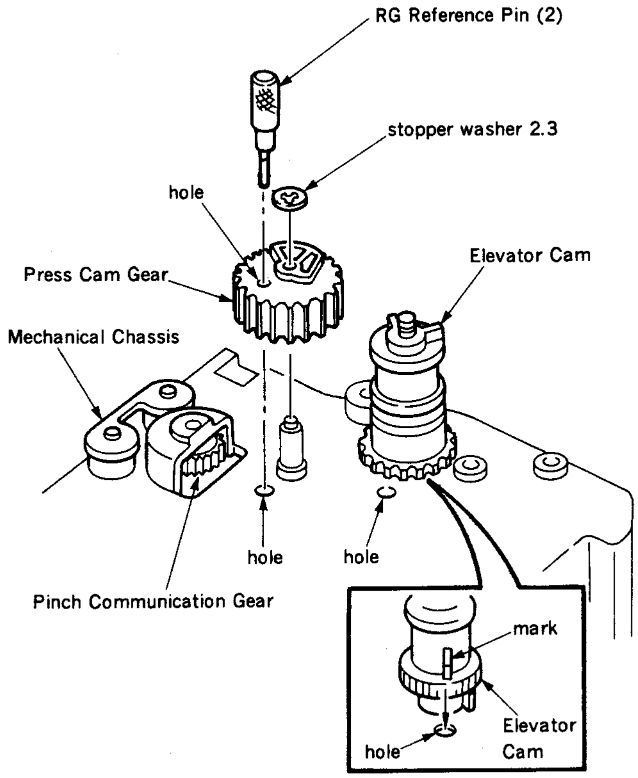
4-13. PRESS CAM GEAR REPLACEMENT

Tool:
RG reference pin (2) (J-6380-050-A)

(1) Remove the pinch roller block ass'y and Pinch solenoid ass'y according to Sec. 4-12 and 4-31.
(2) Remove stop washer 2.3, then remove the press cam gear.

Note on installation

①Pass RG reference pin (2) through the hole in the press cam gear. Next, align it with the hole in the chassis, then engage the press cam gear with the elevator cam and the pinch communication gear, and install it on the shaft.
(By aligning the pin with the holes in the gear, the meshing phases of the press cam gear, elevator cam and pinch communication gear will coincide.)
②The mark on the elevator cam shown in the figure must coincide with the hole in the chassis.


RG Reference Pin (2)
stopper washer 2.3
hole
Elevator Cam
Press Cam Gear
Mechanical Chassis
hole
hole
Pinch Communication Gear
mark
Elevator Cam
hole

4-14. RVS ARM ASS'Y (RVS GUIDE) AND RVS CAM GEAR REPLACEMENT

Tools:

RG reference pin (1) (J-6380-040-A)
Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Box screwdriver (width 5.5mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)
Sony oil (7-661-018-18)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the E ring, then pull out the RVS arm ass'y. (Fig. 2)
(3) Remove the adjustment nut, then remove the guide base ass'y and the compression coil spring. (Fig. 1)
(4) Remove stop washer 2.3, then pull out the RVS cam gear. (Fig. 2)

Note on installation

①Insert the projection on the guide base ass'y into the hole in the RVS arm, then install the guide base ass'y. (Fig. 1)

②Pass RG reference pin (1) through the hole in the RVS cam gear, then align it with hole B in the chassis, engage the RVS cam gear with the RVS relay gear, then install the gears on the shafts. (Fig. 2). Also, confirm that the hole in the press cam gear coincides with the hole in the chassis. (Refer to Sec. 4-13.)
(By aligning the pin with the holes in the gear, the meshing phases of the drive gears will coincide.)

③Clean the mounting shaft of the RVS arm ass'y with cleaning fluid, then apply 1/2 a drop of Sony oil. (Fig. 2)

④Insert part **a** of the torsion coil spring into hole A in the chassis, then insert part **b** into the bend in the RVS arm ass'y. (Fig. 2)

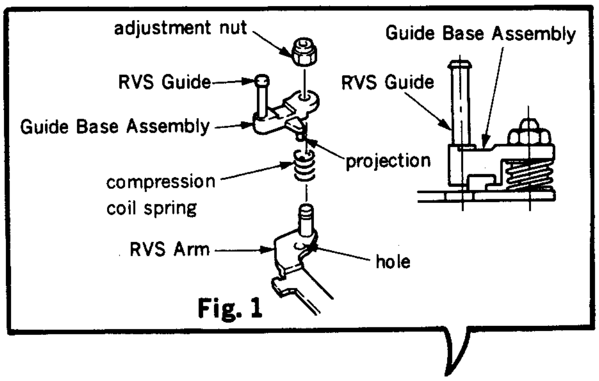

adjustment nut
Guide Base Assembly
RVS Guide
RVS Guide
Guide Base Assembly
projection
compression coil spring
RVS Arm
hole

Fig. 1

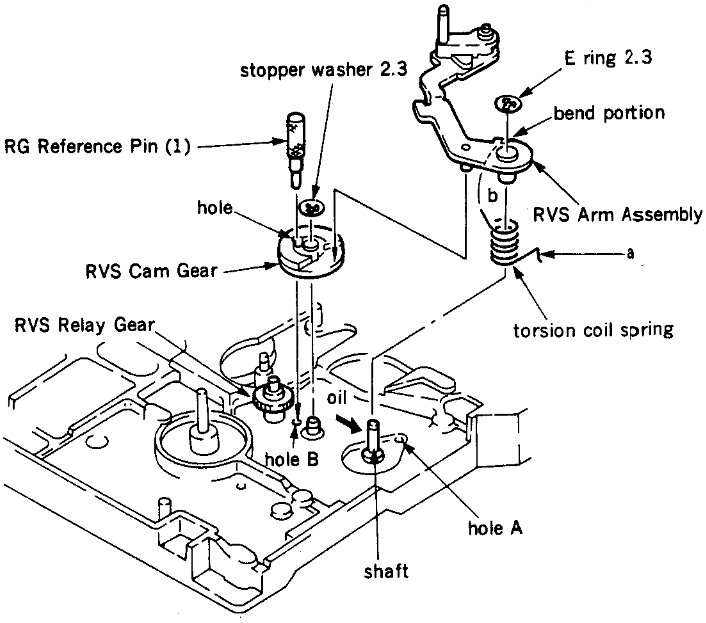

stopper washer 2.3
E ring 2.3
bend portion
RG Reference Pin (1)
hole
b
RVS Arm Assembly
a
RVS Cam Gear
RVS Relay Gear
torsion coil spring
oil
hole B
hole A
shaft

Fig. 2

[Adjustment after replacement]

RVS guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) Set the master block with the stamped L1 face upward, then place it against the RVS guide from the direction shown in the figure. (Fig. 3)

(6) Using a box screwdriver, turn the adjustment nut until the specification is satisfied. (Fig. 4)

(7) Perform tape run adjustment of Sec. 6.

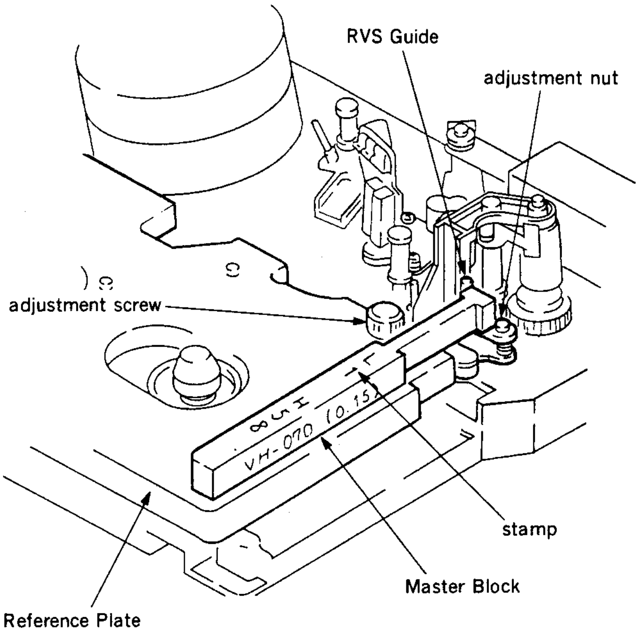

RVS Guide
adjustment nut
adjustment screw
VH-070
(0.15)
stamp
Master Block
Reference Plate

Fig. 3

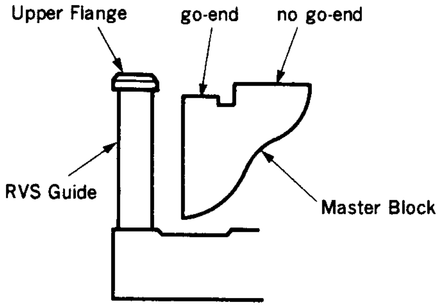

Upper Flange
go-end
no go-end
RVS Guide
Master Block

Fig. 4

Spec.:
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-15. FR DRIVE GEAR AND RVS RELAY GEAR REPLACEMENT

Tools :
RG reference pin (1) (J-6380-040-A)
RG reference pin (2) (J-6380-050-A)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the RVS arm ass'y and the RVS cam gear according to Sec. 4-14.
(3) Remove each of stop washer 2.3, then remove the FR drive gear and the RVS relay gear. (Fig. 1)

Note on installation

Gear installation order

①Install the RVS relay gear on the shaft, taking care that it is facing the right direction. (Fig. 3)

②Pass RG reference pin (2) through the hole in the FR drive gear, then align it with the hole in the mode gear (2), engage the FR drive gear with the RVS relay gear, and install it on the shaft. (Fig. 1)

③Using RG reference pin (1), engage the RVS cam gear with the RVS relay gear, then install it on the shaft according to Sec. 4-14. (Fig. 2)
(By aligning the pin with the holes in the gears, the meshing phases of the drive gears will coincide.)

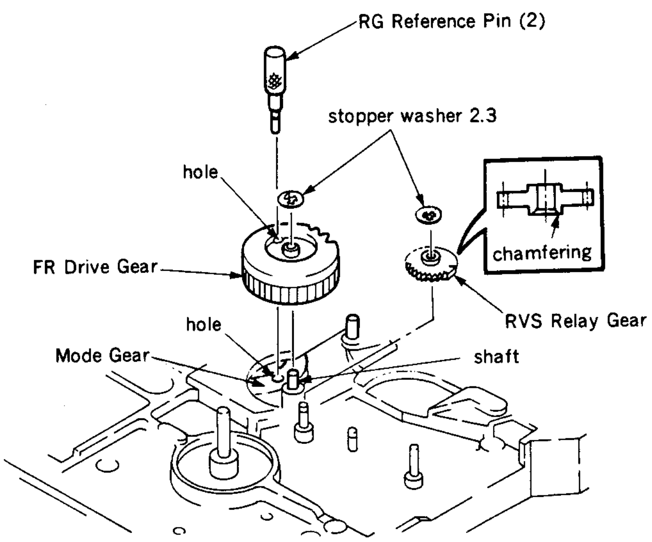

RG Reference Pin (2)
stopper washer 2.3
hole
chamfering
FR Drive Gear
hole
RVS Relay Gear
Mode Gear
shaft

Fig. 1

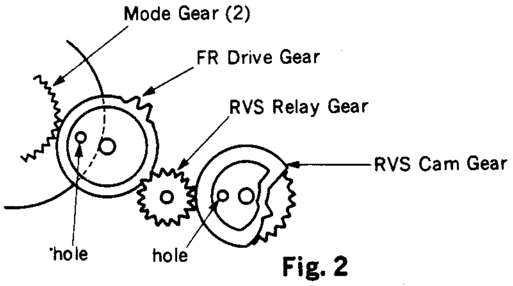

Mode Gear (2)
FR Drive Gear
RVS Relay Gear
RVS Cam Gear
hole
hole

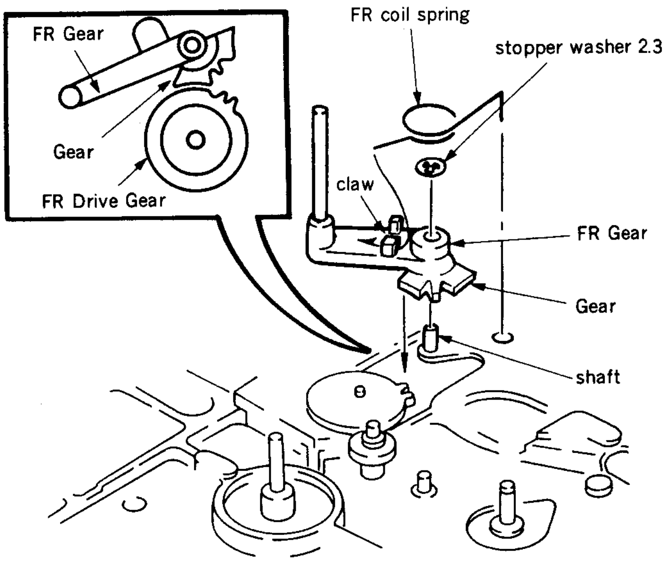
Fig. 2

4-16. FR GEAR REPLACEMENT

(1) Remove the FR coil spring.
(2) Remove stop washer 2.3, then pull out the FR gear.

Note on installation

①Align the gear part of the FR gear with the position shown in Fig. 2.


FR Gear
Gear
FR Drive Gear
FR coil spring
stopper washer 2.3
claw
FR Gear
Gear
shaft

4-17. REEL TABLE ASS'Y REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Reel table height adjustment tool (J-6380-090-A)
Hex wrench screwdriver (width 1.5mm)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the set screw with the hex wrench.
(3) Pull out the reel table ass'y from the reel shaft.

[Reel table height adjustment]

(1) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
(2) Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(3) Clean the top of the reference plate and the adjustment face of the reel table height adjustment tool with cleaning fluid.
(4) Set the reel table height adjustment tool with the stamped side upward, then install it on the reference plate. (Fig. 2)
(5) Perform adjustment so that the height of the S side reel table (or T side reel table) satisfies the specification at position **a**, then rotate the table 90° in the direction of the arrow, and perform adjustment so that the height of the reel table satisfies the specification at position **b**. (Figs. 2 and 3)

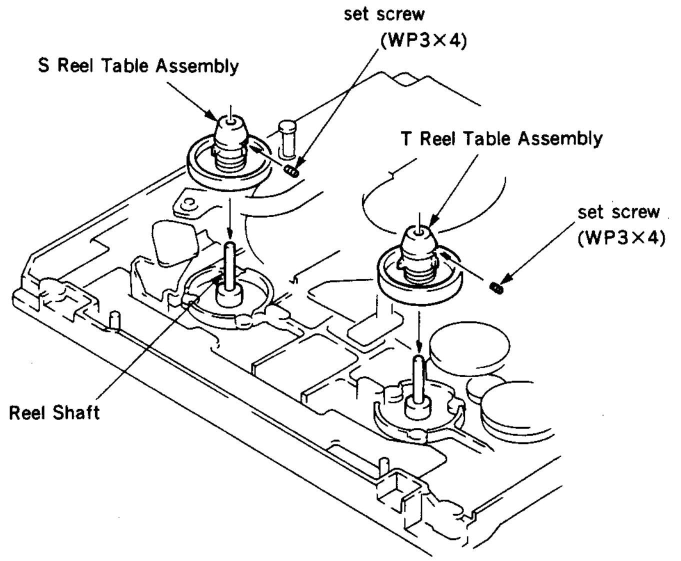

set screw
(WP3X4)
S Reel Table Assembly
T Reel Table Assembly
set screw
(WP3X4)
Reel Shaft

Fig. 1

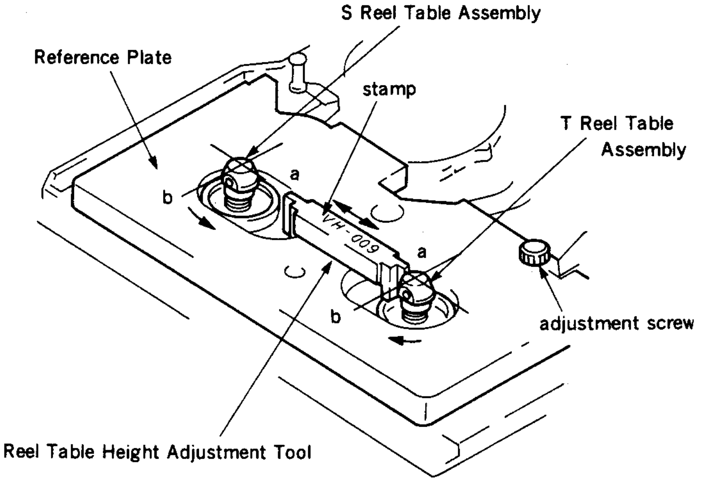

S Reel Table Assembly
Reference Plate
stamp
T Reel Table Assembly
a
b
VH-009
a
b
adjustment screw
Reel Table Height Adjustment Tool

Fig. 2

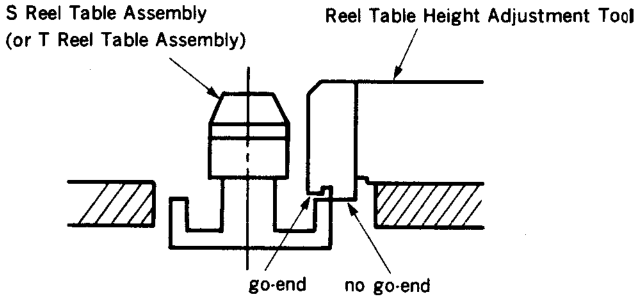

S Reel Table Assembly
(or T Reel Table Assembly)
Reel Table Height Adjustment Tool
go-end
no go-end

Fig. 3

Spec. :
The height of the S side (T side) reel table must pass at the go-end of the reel table height adjustment tool and stop at the no-go end.

4-18. REEL BRAKE ASS'Y REPLACEMENT

(1) Remove the cassette compartment according to Sec. 4-2.

(2) Remove the harness of the LE-80 board from the claw of the reel brake ass'y. (surface of chassis) (Fig. 1)

(3) Disconnect connector CN656W of the solenoid harness from the HN-160 board. (surface of chassis) (Fig. 1)

(4) Remove the two screws, then remove the reel brake ass'y. (back side of chassis) (Fig. 1)

(5) Remove the spring, then the claw of the M clamp, then remove the brake arm (S) ass'y and the brake arm (T) ass'y. (Fig. 2)

(6) Raise part A of the B slider in the direction of arrow B, then remove the claw from the iron core of the solenoid, and pull out the B slider in the direction of arrow C. (Fig. 2)

(7) Remove the two screws and two washers, then remove the solenoid. (Fig. 2)

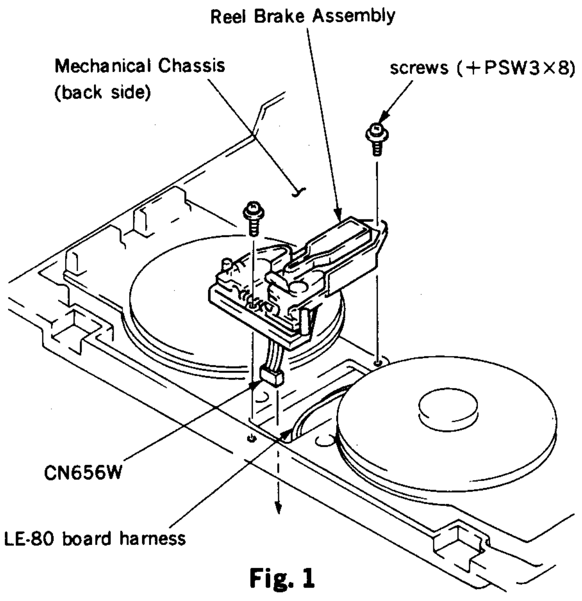

Reel Brake Assembly
Mechanical Chassis
(back side)
screws (+PSW3×8)
CN656W
LE-80 board harness

Fig. 1

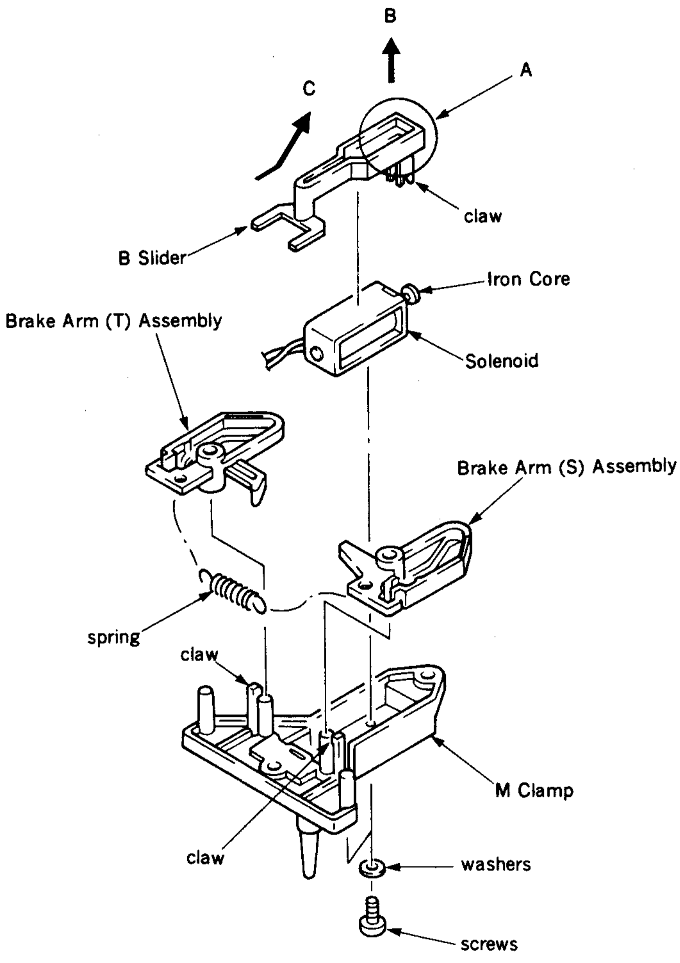

B
C
A
claw
B Slider
Iron Core
Brake Arm (T) Assembly
Solenoid
Brake Arm (S) Assembly
spring
claw
M Clamp
claw
washers
screws

Fig. 2

4-19. REEL MOTOR REPLACEMENT

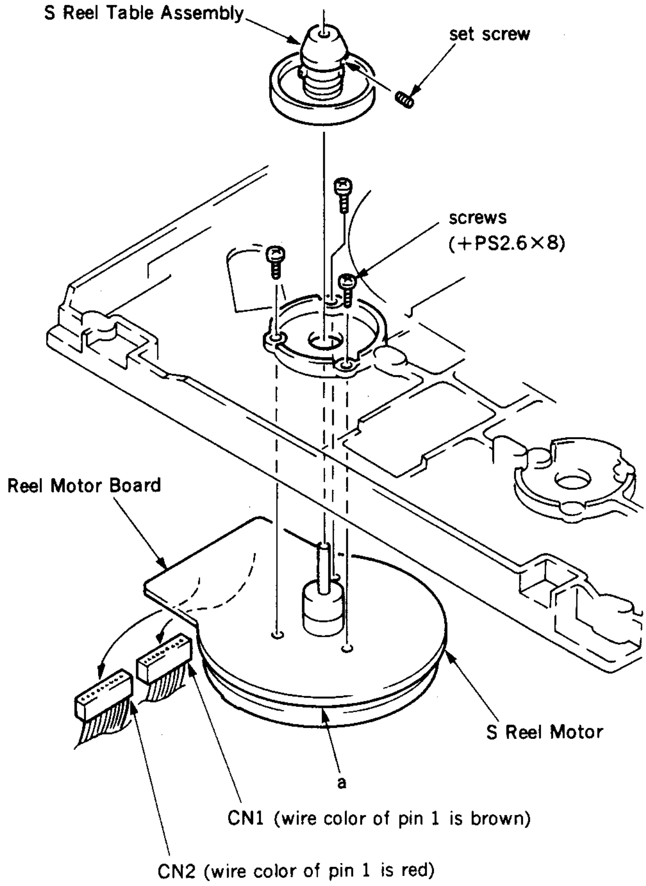
Tools :
Reference plate (J-6380-080-A)
Reel table height adjustment tool (J-6380-090-A)
Hex wrench screwdriver (width 1.5 mm)

- The procedure of replacing the reel motor is the same for both the S side and the T side. Here, the procedure of replacing the S side reel motor is described.

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the S side reel table ass'y according to sub-section 4-17.
(3) Disconnect two connectors CN1 and CN2 from the reel motor board.
(4) Remove three screws, then remove the S side reel motor.

Note : Do not touch the outer periphery (**a** part) of the reel motor with the fingers.

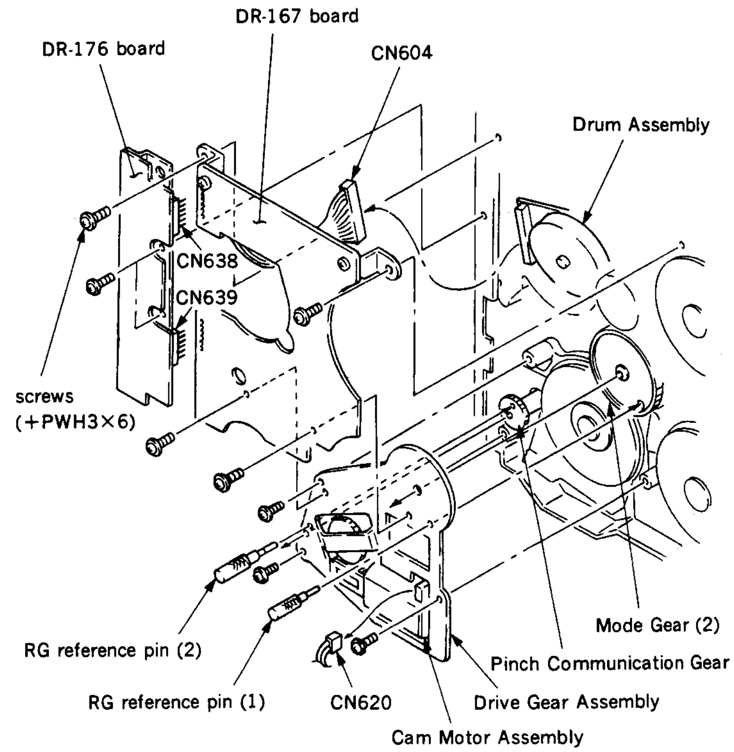
[**Adjustment after installation**]
(1) Adjust the height of the S side reel table ass'y according to sub-section 4-17.


S Reel Table Assembly
set screw
screws
(+PS2.6×8)
Reel Motor Board
S Reel Motor
a
CN1 (wire color of pin 1 is brown)
CN2 (wire color of pin 1 is red)

4-20. DRIVE GEAR ASS'Y REPLACEMENT

Tools :
RG reference pin (1) (J-6380-040-A)
RG reference pin (2) (J-6380-050-A)

(1) Remove the LDB brake ass'y from the drive gear ass'y using the procedure in Sec. 4-32.
(2) Remove the two screws, then disconnect the connector pins of CN638 and CN639 from the DR-167 board, and remove the DR-176 board.
(3) Disconnect connector CN604 from the drum ass'y.
(4) Disconnect connector CN620 from the LD-35 board of the cam motor ass'y.
(5) Remove the four screws, then remove the DR-176 board.
(6) Remove the three screws, then remove the drive gear ass'y.
Take care not to rotate the mode gear (2) and the pinch communication gear more than one revolution after removing the drive gear ass'y.


DR-167 board
DR-176 board
CN604
Drum Assembly
CN638
CN639
screws
(+PWH3×6)
Mode Gear (2)
RG reference pin (2)
Pinch Communication Gear
RG reference pin (1)
CN620
Drive Gear Assembly
Cam Motor Assembly

Note on installation

①Pass RG reference pin (1) and RG reference pin (2) through the holes shown in the drawing of the drive gear ass'y, then align the pins with the holes in the mode gear (2) and pinch communication gear, respectively, and install the drive gear ass'y. (By aligning the pins with the holes in the gears, the meshing phases of the drive gear system will coincide.)

4-20-1. Cam motor ass'y replacement

(1) Remove the screw, then remove the cam motor ass'y. (Fig. 1)

Note on installation

①Align the groove of the cam motor ass'y with part **a** of the drive gear ass'y. (Fig. 1)
②Align the hole in the cam motor ass'y with the projection on the drive gear ass'y. (Fig. 1)
③Set the cam motor parallel to the **b** face of the drive gear ass'y, then screw it fixed. (Fig. 2)

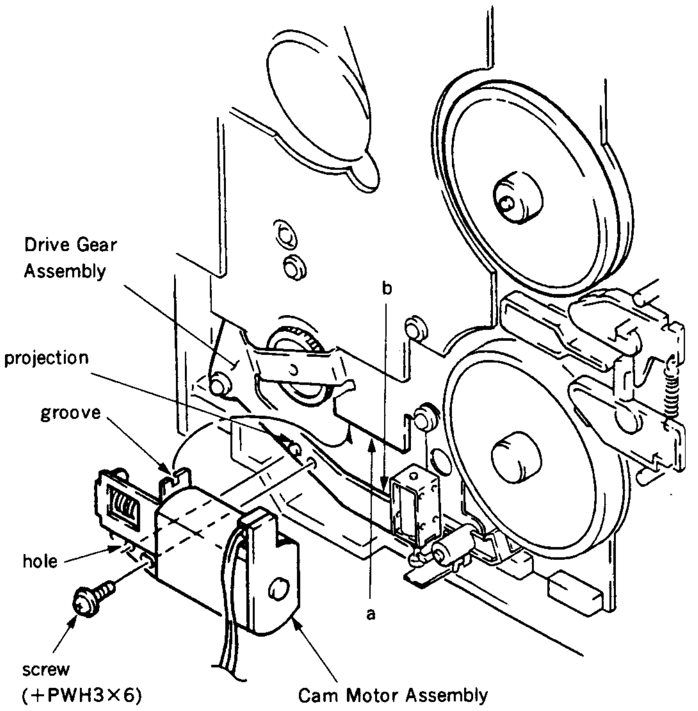

Drive Gear Assembly
projection
groove
hole
screw (+PWH3×6)
b
a
Cam Motor Assembly

Fig. 1

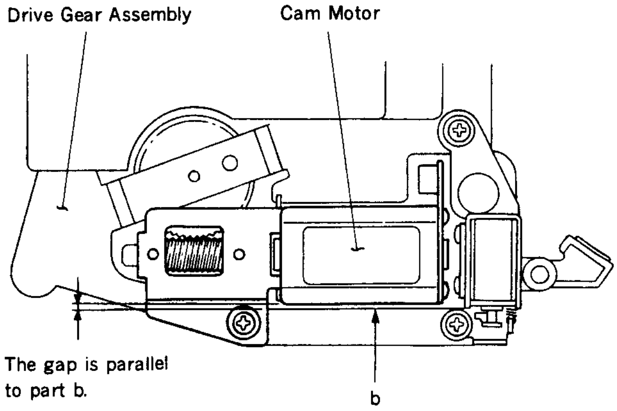

Drive Gear Assembly
Cam Motor
The gap is parallel to part b.
b

Fig. 2

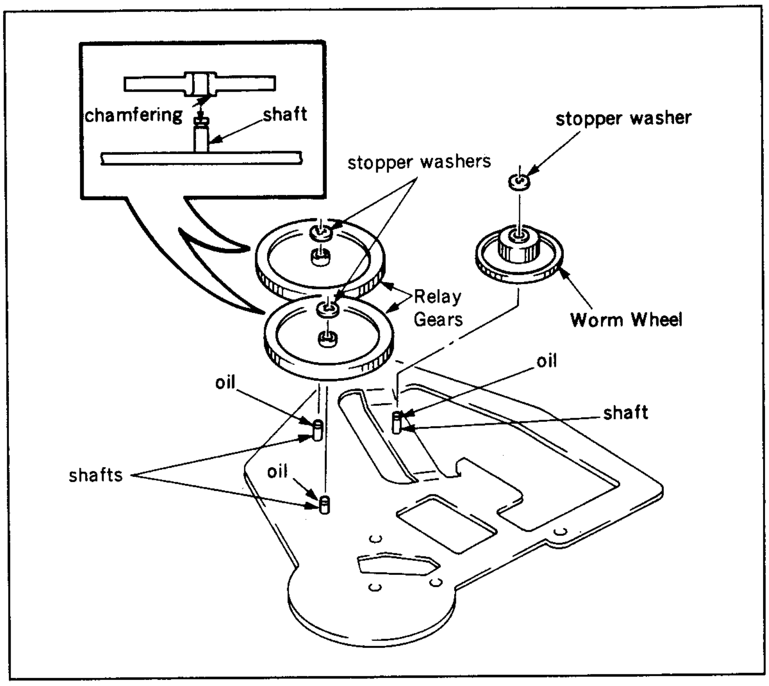
4-20-2. Relay gear and worm wheel replacement

Tool:
Sony oil (7-661-018-18)

(1) Remove the stop washer, then remove the relay gear and the worm wheel.

Note on installation

①Clean the shafts with cleaning fluid, then apply 1/2 a drop of Sony oil.


chamfering
shaft
stopper washers
stopper washer
Relay Gears
Worm Wheel
oil
shaft
oil
shafts
oil

4-21. MODE GEAR (2) ASS'Y REPLACEMENT

Tool:
RG reference pin (2) (J-6380-050-A)

(1) Remove the drive gear ass'y according to Sec. 4-20.
(2) Remove the stop washer, then remove the mode gear (2) ass'y from the shaft. (Fig. 1)

Note on installation

①Push the loading gear (right) in the direction of arrow A. Pass RG reference pin (2) through the hole in the mode gear (2) ass'y, then align it with the ※ mark on the chassis, then engage the mode gear ass'y with the FR drive gear, and install it. (Figs. 1 and 2)
(By aligning the pin with the holes in the gears, the meshing phases of the mode gear ass'y and the FR drive gear will coincide.)
②Align the meshing phases of the gears, and install the drive gear ass'y according to Sec. 4-20.

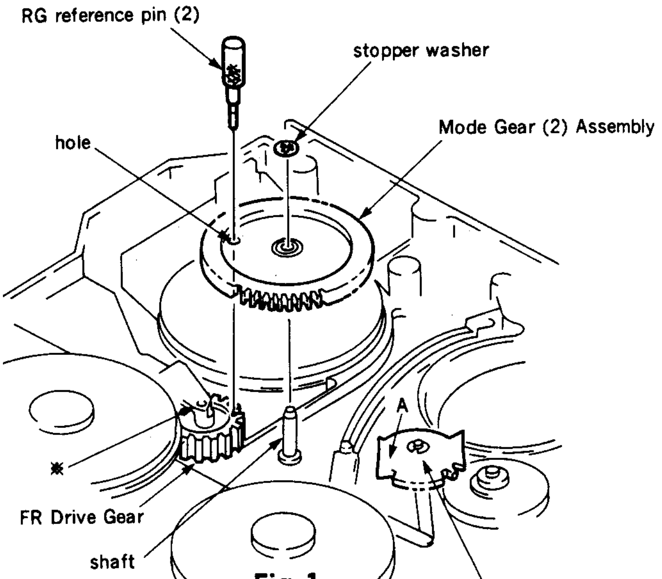

RG reference pin (2)
stopper washer
Mode Gear (2) Assembly
hole
A
※
FR Drive Gear
shaft
Loading Gear (Right)

Fig. 1

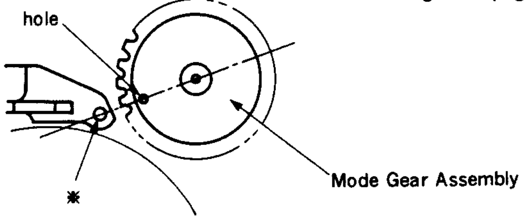

hole
Mode Gear Assembly
※

Fig. 2

4-22. LOADING GEAR (RIGHT) ASS'Y REPLACEMENT

Tool:

MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L: DOW CORNING Corp.

(1) Remove the drive gear ass'y according to Sec. 4-20.
(2) Remove the mode gear (2) ass'y according to Sec. 4-21.
(3) Rotate the gear part of the loading gear (right) manually in the direction of the arrow to the position shown in Fig. 1.
(4) Remove the two E rings, then remove the loading gear (right) ass'y. (Fig. 2)

Note: Take care not to deform the arm of the loading gear (right) ass'y.

Note on installation

①Align the mark on the loading gear (left) with the center point between two teeth on the loading gear (right), then install the chassis shaft and the shaft of the shuttle (right). (Fig. 3)
②Smear a small amount of grease to the part of the loading gear (right) ass'y indicated in the figure. (Fig. 2)
③Align the engagement phases of the mode gear (2) ass'y and the drive gear ass'y ,then install the gear ass'ys, according to Sec. 4-21 and 4-20.

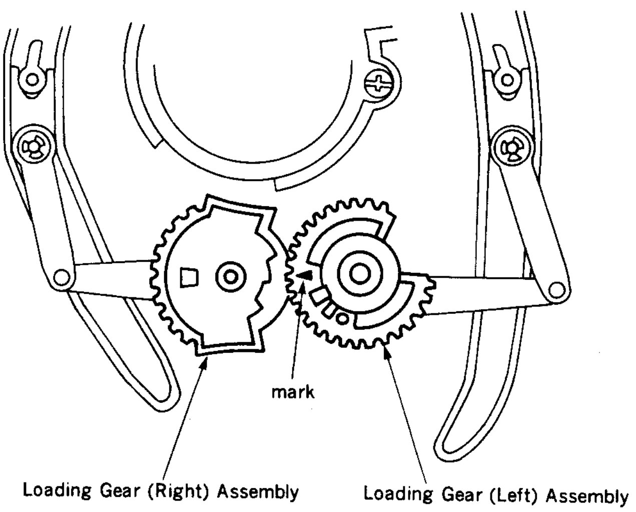

mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 1

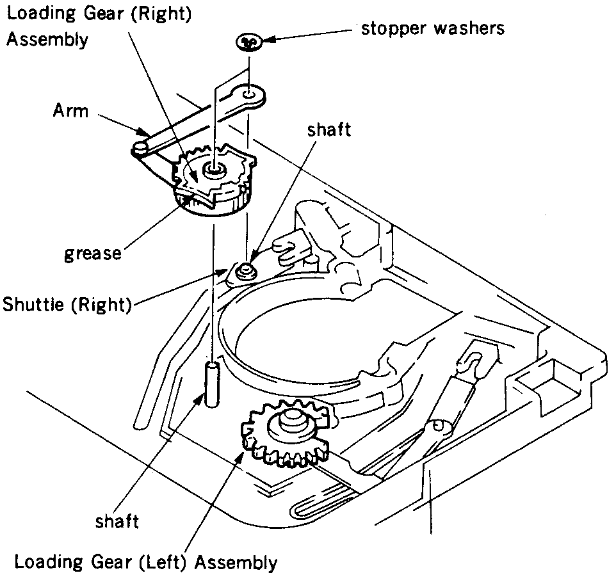

Loading Gear (Right) Assembly
stopper washers
Arm
shaft
grease
Shuttle (Right)
shaft
Loading Gear (Left) Assembly

Fig. 2

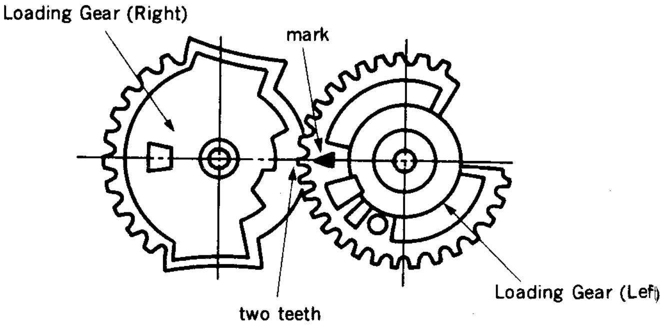

Loading Gear (Right)
mark
two teeth
Loading Gear (Left)

Fig. 3

4-23. LOADING GEAR (LEFT) ASS'Y REPLACEMENT

(1) Remove the cam motor ass'y according to Sec. 4-20-1. (Fig. 1)

(2) Rotate the worm wheel of the drive gear clockwise manually until the loading gear (left) ass'y moves to the position shown in Fig. 2. (Figs. 1 and 2)

(3) Remove the two stop washers, then remove the loading gear (left) ass'y. (Fig. 3)

Note: Take care not to deform the arm of the loading gear (left) ass'y.

Note on installation

①Align the mark on the loading gear (left) with the center point between two teeth of the loading gear (right), then install the gears on the shaft of the chassis and the shaft of the shuttle (left). (Fig. 4)

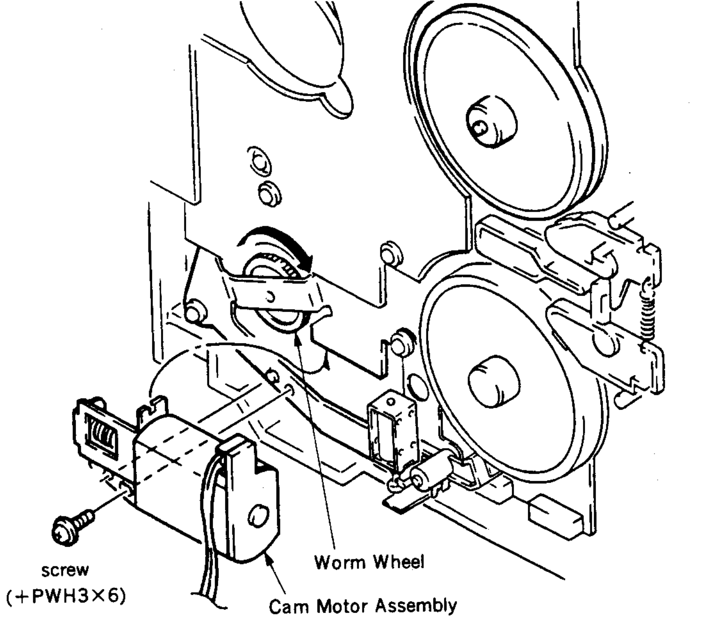

screw
(+PWH3×6)
Worm Wheel
Cam Motor Assembly

Fig. 1

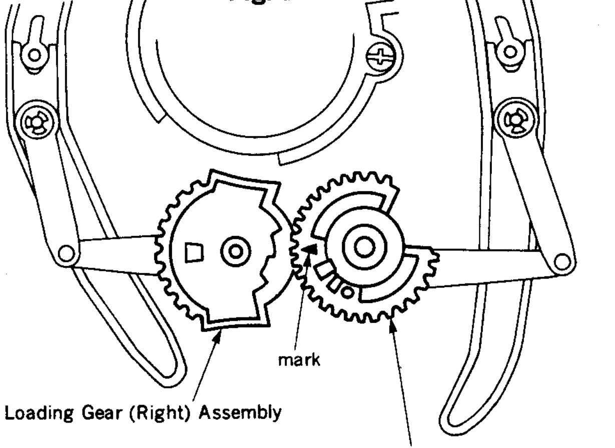

mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 2

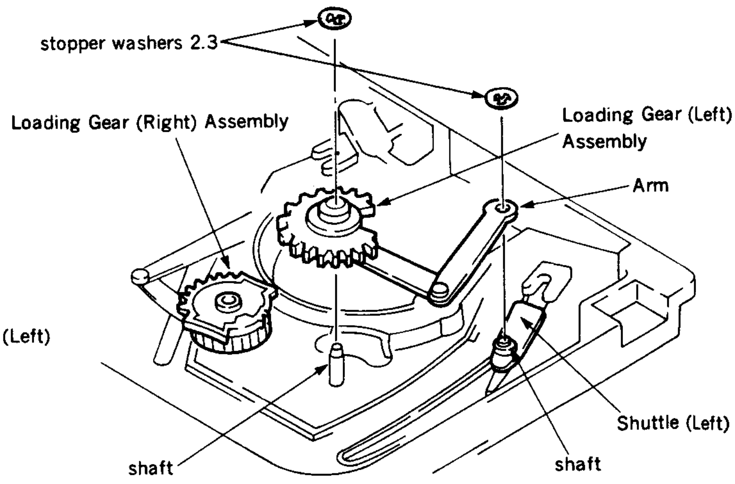

stopper washers 2.3
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly
Arm
Shuttle (Left)
shaft
shaft

Fig. 3

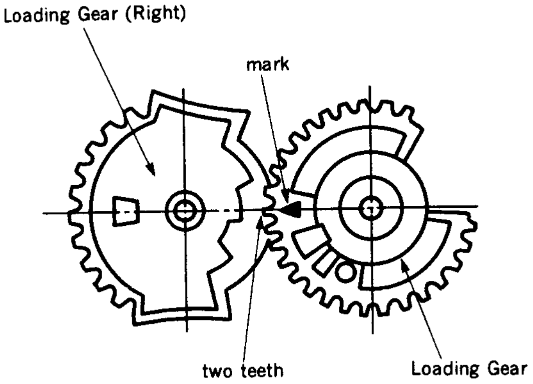

Loading Gear (Right)
mark
two teeth
Loading Gear (Left)

Fig. 4

4-24. SHUTTLE (RIGHT) ASS'Y REPLACEMENT

Tools:

Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.

(2) Refer to Sec. 4-23, then move the loading gear (right) ass'y to the position shown in Fig. 1.

(3) Remove the stop washer, then remove the arm of the loading gear (right) ass'y from the shaft of the shuttle plate ass'y. (Fig. 2)

Note: Take care not to deform the arm of the loading gear (right) ass'y.

(4) Remove the screw, then remove the shuttle (right) ass'y and the shuttle plate ass'y. (Fig. 3)

Note: Move the shuttle (right) ass'y in the unthreading end direction to ensure that it does not strike the drum ass'y, then remove it.

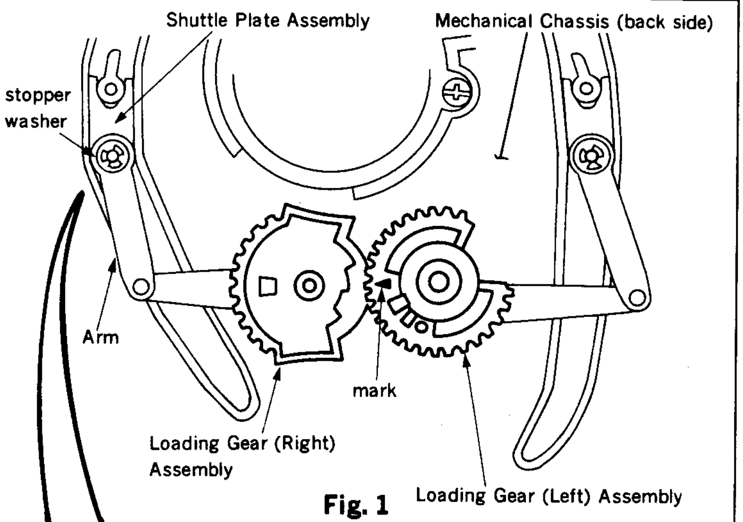

Shuttle Plate Assembly
Mechanical Chassis (back side)
stopper washer
Arm
mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 1

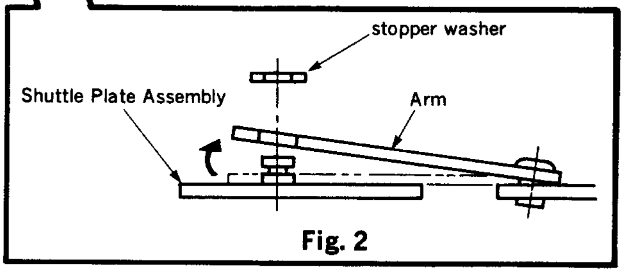

stopper washer
Shuttle Plate Assembly
Arm

Fig. 2

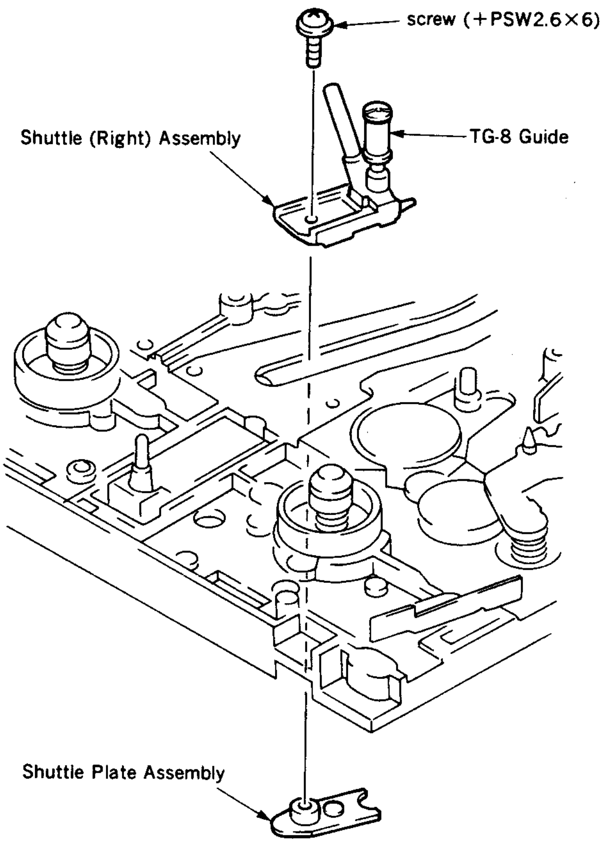

screw (+PSW2.6×6)
Shuttle (Right) Assembly
TG-8 Guide
Shuttle Plate Assembly

Fig. 3

Note on installation

①Put the screw as shown in Fig. 4 when installing the shattle (right) ass'y to the shattle plate ass'y.

[Adjustment after replacement]

TG-8 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 5) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) Set the master block with the H10 stamped mark upward, then place it against the TG-8 guide from the direction shown in the figure. (Fig. 5)

(6) Using the guide adjustment screwdriver, turn the upper flange on the guide until the specification is satisfied. (Fig. 6)

(7) Perform tape run adjustment of Sec. 6.

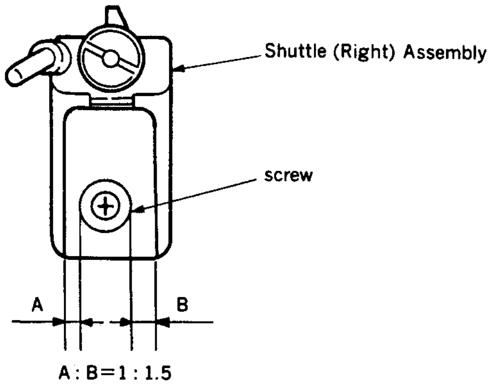

Shuttle (Right) Assembly
screw
A
B
A : B=1 : 1.5

Fig. 4

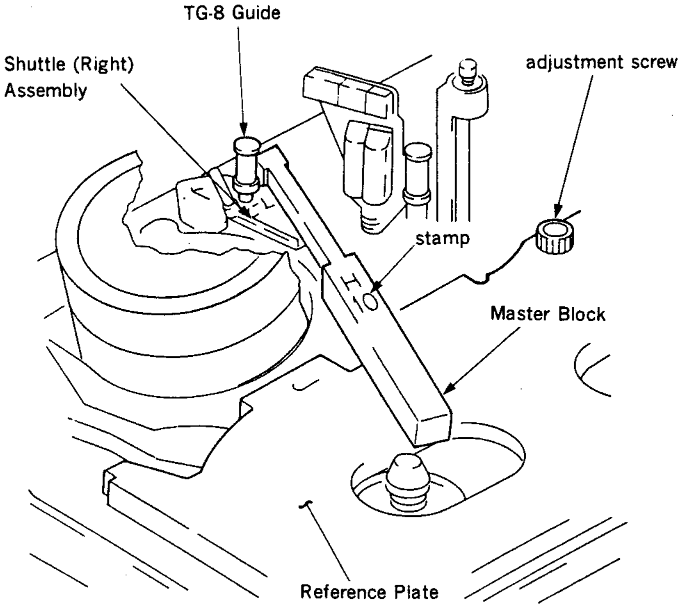

TG-8 Guide
Shuttle (Right) Assembly
adjustment screw
stamp
H10
Master Block
Reference Plate

Fig. 5

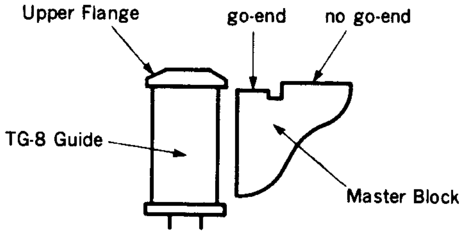

Upper Flange
go-end
no go-end
TG-8 Guide
Master Block

Fig. 6

Spec. :
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-25. TG-8 GUIDE REPLACEMENT

Tools :
Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Loosen the set screw with a hex wrench. (Fig. 1)
(3) Rotate the TG-8 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

Note on installation

①Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
②Install the reference plate on the chassis. (Fig. 2)
(If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
③Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
④Set the master block with the H10 stamped mark upward, then place it against the TG-8 guide from the direction shown in the figure, and tighten the set screw until the upper flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Tightening torque of set screw : 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))

[**Adjustment after replacement**]
(1) Perform TG-8 guide height adjustment according to Sec. 4-24.
(2) Perform tape run adjustment of Sec. 6.

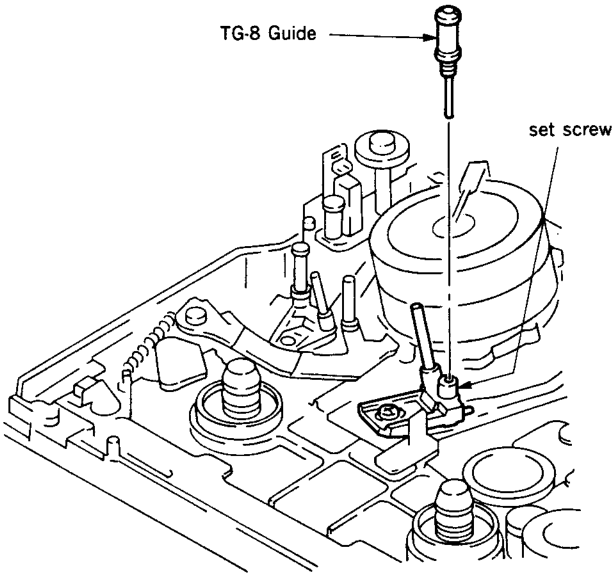


Fig. 1

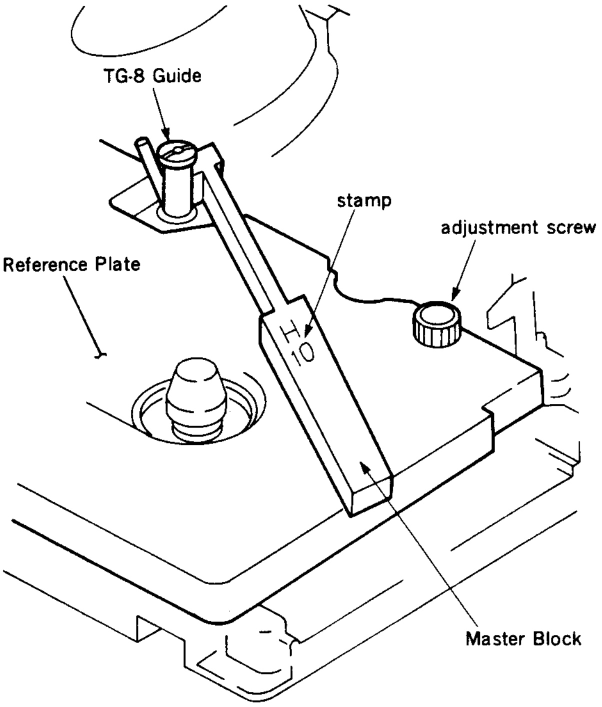


Fig. 2

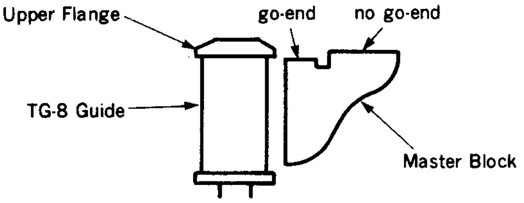


Fig. 3

4-26. SHUTTLE (LEFT) ASS'Y REPLACEMENT

Tools:

Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Remote controller: (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.

(2) Remove the stop washer, then remove the arm of the loading gear (left) ass'y from the shaft of the shuttle plate ass'y. (Fig. 1)

Note: Take care not to deform the arm of the loading gear (left) ass'y.

(3) Remove the screw, then remove the shuttle (left) ass'y and the shuttle plate ass'y. (Fig. 2)

Note on installation

①The tension regulator ass'y and shuttle (left) ass'y must be in the position shown in Fig. 3.

②Put the screw as shown in Fig. 4 when installing the shattle (left) ass'y to the shattle plate ass'y.

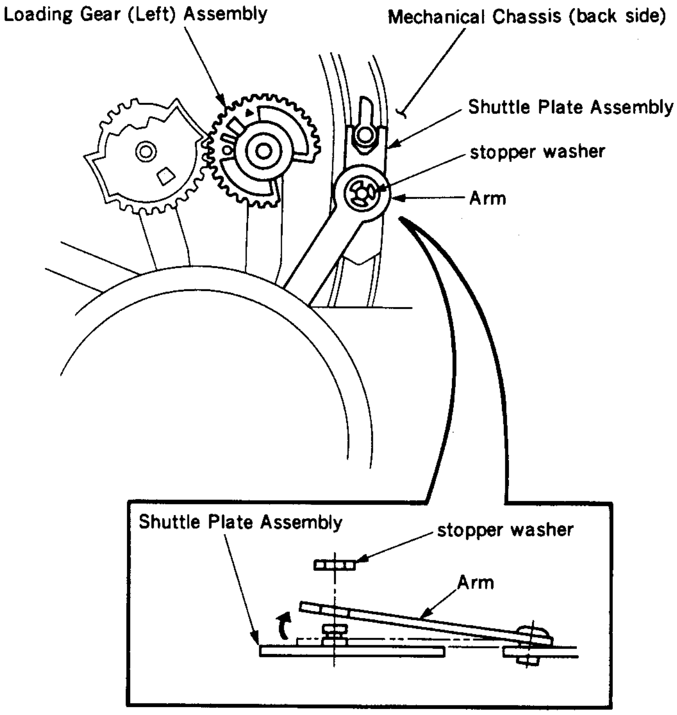

Loading Gear (Left) Assembly
Mechanical Chassis (back side)
Shuttle Plate Assembly
stopper washer
Arm
Shuttle Plate Assembly
stopper washer
Arm

Fig. 1

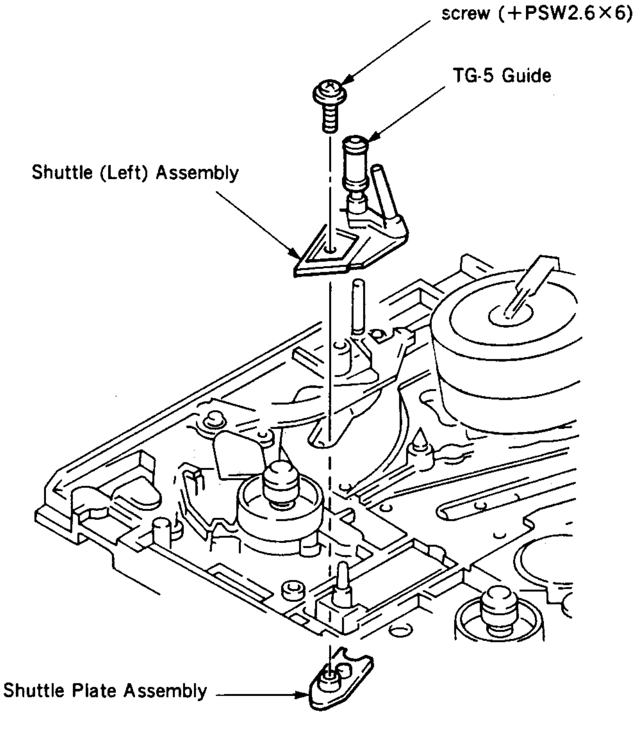

screw (+PSW2.6×6)
TG-5 Guide
Shuttle (Left) Assembly
Shuttle Plate Assembly

Fig. 2

[**Adjustment after replacement**]

TG-5 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (See sub-section 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 5) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) While moving the stabilizer in the direction of the arrow, set the master block with the H10 stamped mark upward, then place it against the TG-5 guide from the direction shown in the figure. (Fig. 5)

(6) Using the guide adjustment screwdriver, turn the upper flange on the guide until the specification is satisfied. (Fig. 6)

(7) Perform tape run adjustment of Sec. 6.

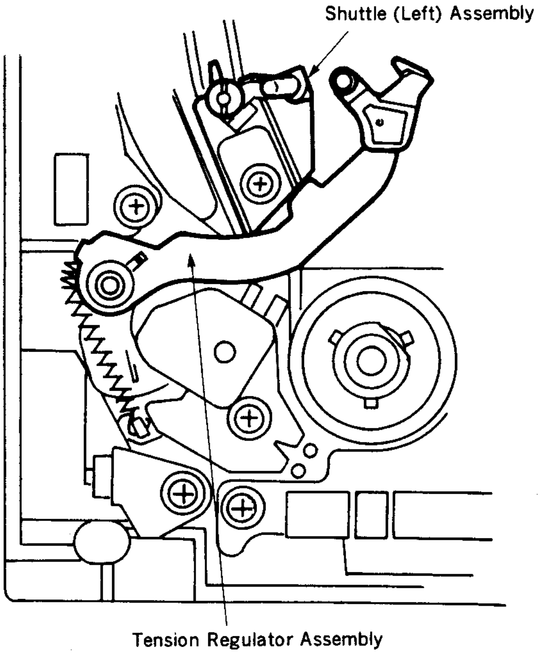

Shuttle (Left) Assembly
Tension Regulator Assembly

Fig. 3

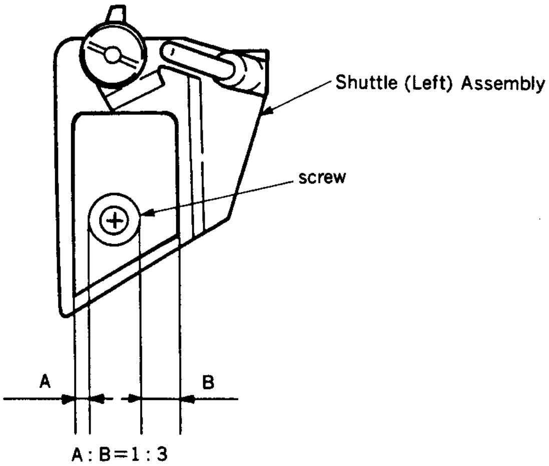

Shuttle (Left) Assembly
screw
A
B
A : B=1 : 3

Fig. 4

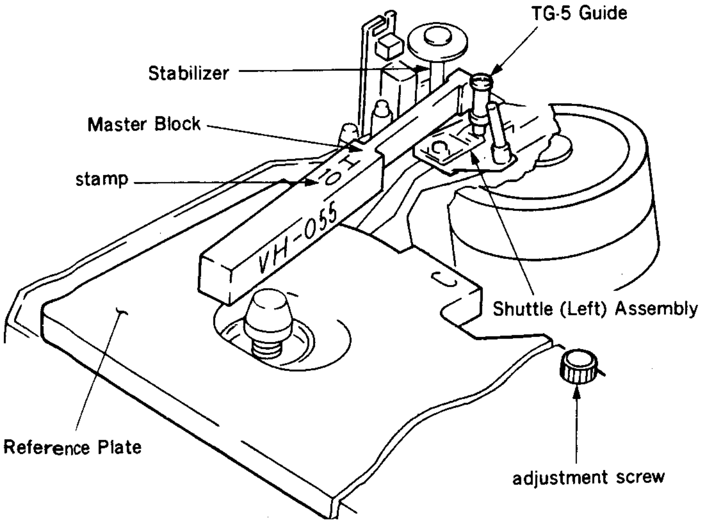

TG-5 Guide
Stabilizer
Master Block
stamp
VH-055
Shuttle (Left) Assembly
Reference Plate
adjustment screw

Fig. 5

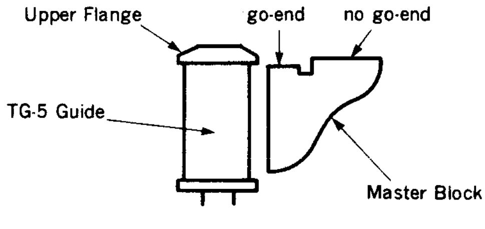

Upper Flange
go-end
no go-end
TG-5 Guide
Master Block

Fig. 6

Spec. :
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-27. TG-5 GUIDE REPLACEMENT

Tools :
Reference plate (J-6380-080-A)
Master block (J06380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Loosen the set screw with a hex wrench. (Fig. 1)
(3) Rotate the TG-5 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

Note on installation

①Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
②Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
③Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
④Set the master block with the H10 stamped mark upward, then place it against the TG-5 guide from the direction shown in the figure, and tighten the set screw untile the upper flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Tightening torque of set screw : 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))

[Adjustment after replacement]
(1) Perform TG-5 guide height adjustment according to Sec. 4-26.
(2) Perform tape run adjustment of Sec. 6.

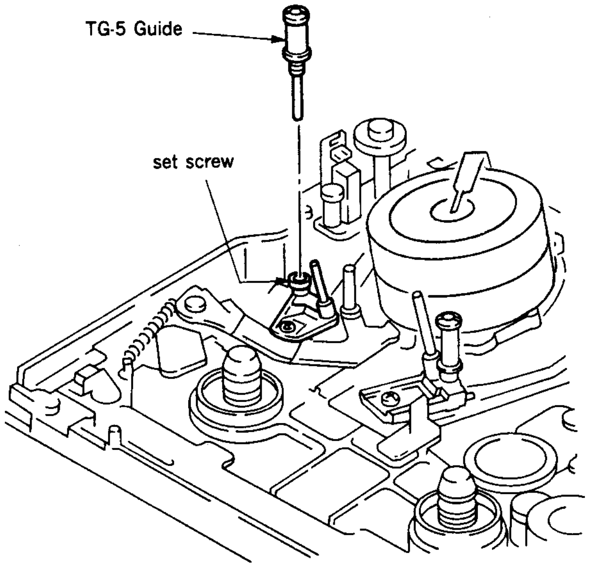


Fig. 1

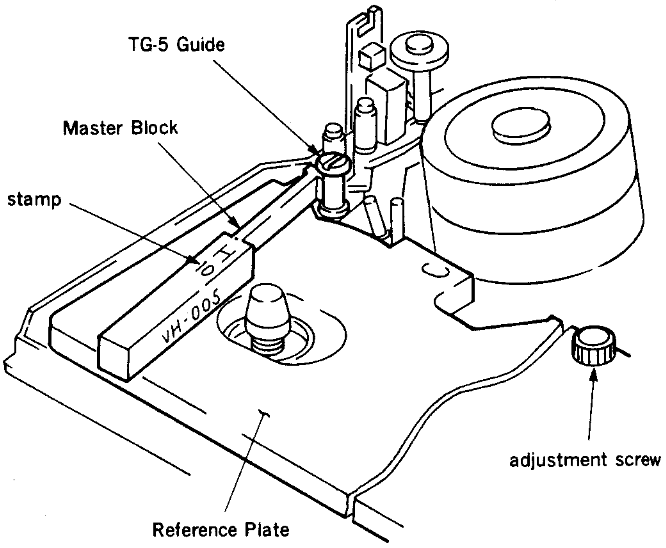


Fig. 2

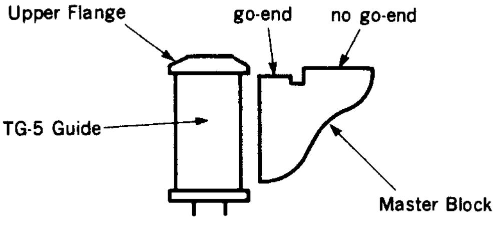


Fig. 3

4-28. SLIDE RAIL (R) REPLACEMENT

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the BC roller ass'y according to Sec. 4-3.
(3) Remove the shuttle (right) ass'y according to Sec. 4-24.
(4) Remove the screw, then remove the LE-80 board. (Fig. 1)
(5) Remove the two screws, then remove the shuttle holder in the direction of arrow A. (Fig. 1)
(6) Remove claws **a**, **b** and **c** and also the two parts with the square hole on slide rail (R) from the chassis, then remove the slide rail (R). (Fig. 1)

Note on installation

①While moving the stabilizer in the direction of arrow B, fit claw **a** into the chassis, then insert projection **a** into the hole in the chassis. (Fig. 1)

②Next, align projections **b** and **c** with the holes in the chassis, then insert claws **b** and **c** and also the two parts with the square holes into the chassis. (Figs. 2 and 3)

[**Adjustment after replacement**]

(1) Perform tape run adjustment of Sec. 6.

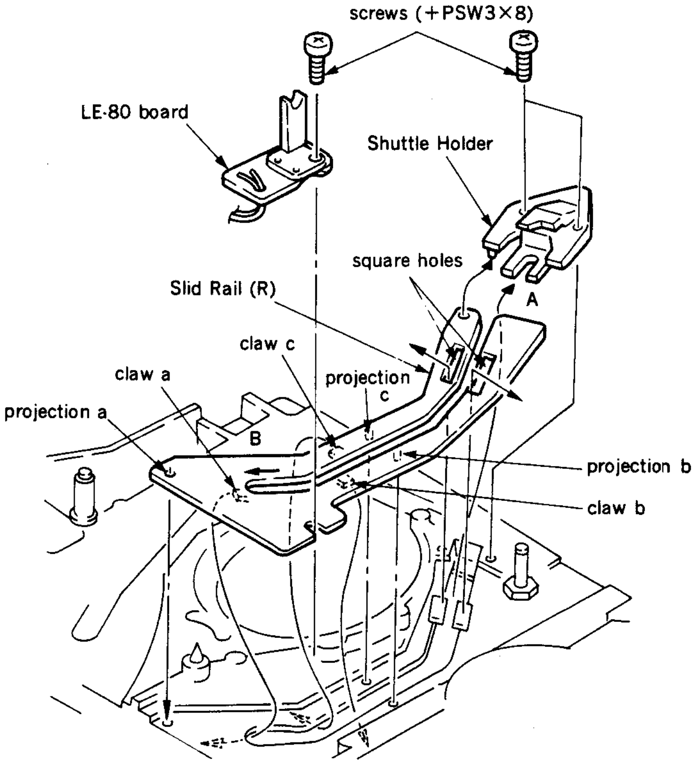

screws (+PSW3×8)
LE-80 board
Shuttle Holder
square holes
Slid Rail (R)
A
claw c
claw a
projection c
projection a
B
projection b
claw b

Fig. 1

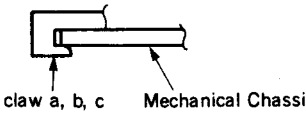

claw a, b, c
Mechanical Chassis

Fig. 2

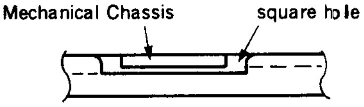

Mechanical Chassis
square hole

Fig. 3

4-29. SLIDE RAIL (L) REPLACEMENT

(1) Remove the cassette compartment according to Sec. 4-2.

(2) Remove the tension regulator ass'y and the STD ass'y according to Sec. 4-7.

(3) Remove the tape stabilizer ass'y according to Sec. 4-9.

(4) Remove the shuttle (left) ass'y according to Sec. 4-26.

(5) Remove the two screws, then remove the shuttle holder in the direction of arrow A. (Fig. 1)

(6) Remove claws **a**, **b** and **c** and the two parts with the square hole on slide rail (L) from the chassis, then remove the slide rail (L). (Fig. 1)

Note on installation

①While moving the slide rail in the direction of arrow B, fit claw **a** into the chassis, then insert projection **a** into the hole in the chassis. (Fig. 1)

②Next, align projections **b** and **c** with the holes in the chassis, then insert claws **b** and **c** and also the two parts with the square hole into the chassis. (Figs. 2 and 3)

[**Adjustment after replacement**]

(1) Adjust the height of the TG-3 guide once again according to Sec. 4-9.

(2) Adjust the position of the tension regulator once again according to Sec. 4-7.

(3) Adjust the tape tension once again according to Sec. 6-2.

(4) Perform tape run adjustment of Sec. 6.

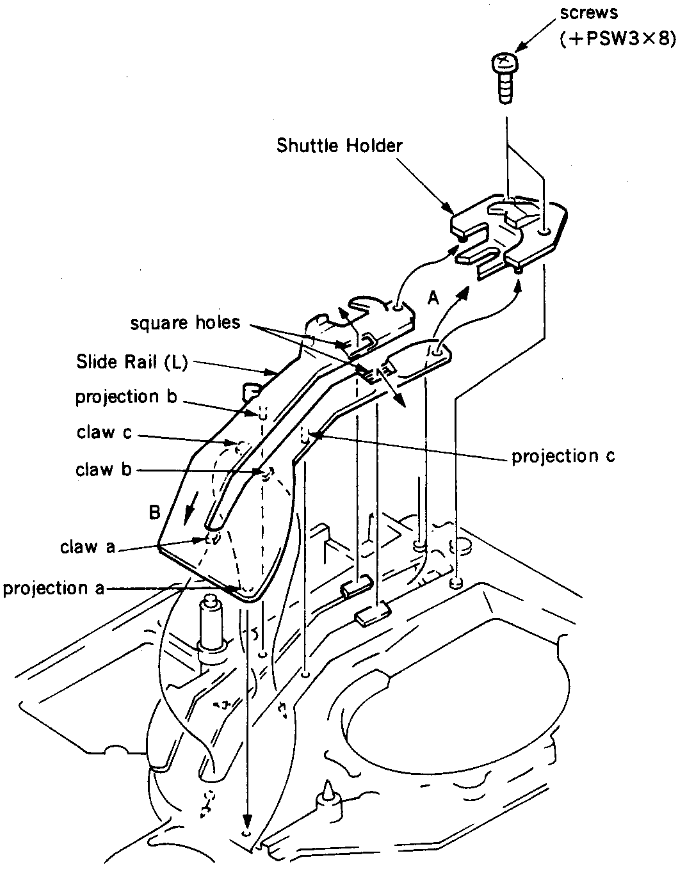

screws
(+PSW3×8)
Shuttle Holder
A
square holes
Slide Rail (L)
projection b
claw c
claw b
projection c
B
claw a
projection a

Fig. 1

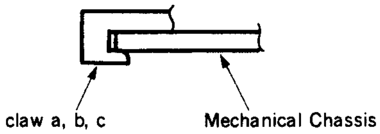

claw a, b, c
Mechanical Chassis

Fig. 2

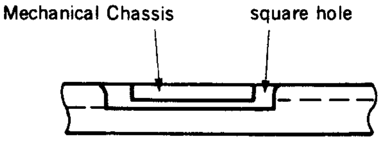

Mechanical Chassis
square hole

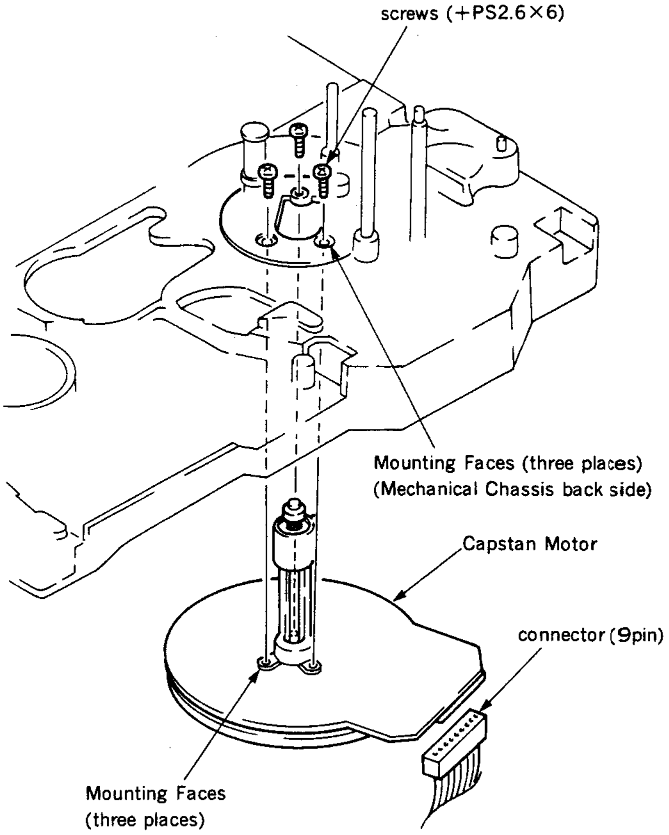
Fig. 3

4-30. CAPSTAN MOTOR REPLACEMENT

(1) Remove the drive gear ass'y according to Sec. 4-20.

(2) Disconnect the 9-pin connector from the capstan motor board.

(3) Remove the three screws, then remove the capstan motor.


screws (+PS2.6×6)
Mounting Faces (three places)
(Mechanical Chassis back side)
Capstan Motor
connector (9pin)
Mounting Faces
(three places)

Note on installation

①Clean the three mounting faces at the back of the chassis and the three mounting faces of the capstan motor with cleaning fluid.

②Take care not to damage the capstan shaft.

[**Adjustment after replacement**]

(1) Perform tape run adjustment of Sec. 6.

4-31. PINCH SOLENOID ASS'Y REPLACEMENT

(1) Disconnect connector CN118 from the SS-49 board, then remove the harness from the wiring clamp. (Fig. 1)

(2) Pull out the pinch roller block ass'y using the procedure in Sec. 4-12.

(3) Remove the screw, then remove the retainer and the poly-slider-washer. (Fig. 2)

(4) Remove the two screws, then raise the pinch solenoid ass'y and remove it. (Fig. 2)

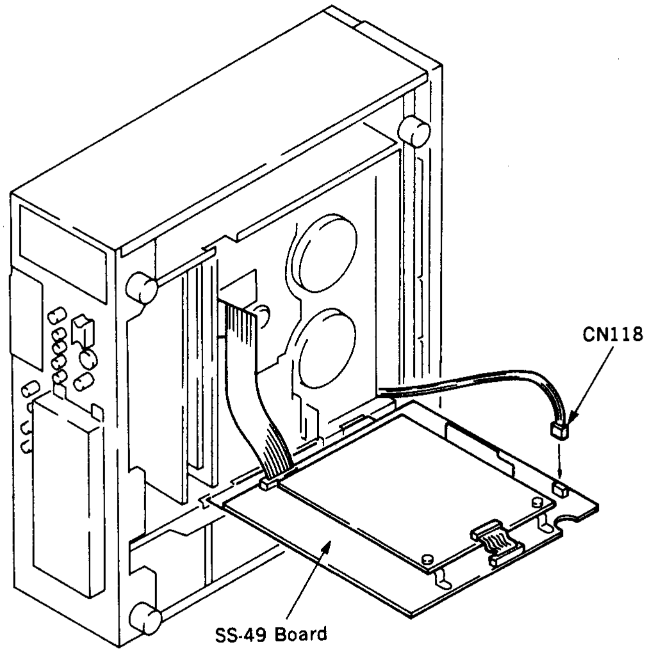

CN118
SS-49 Board

Fig. 1

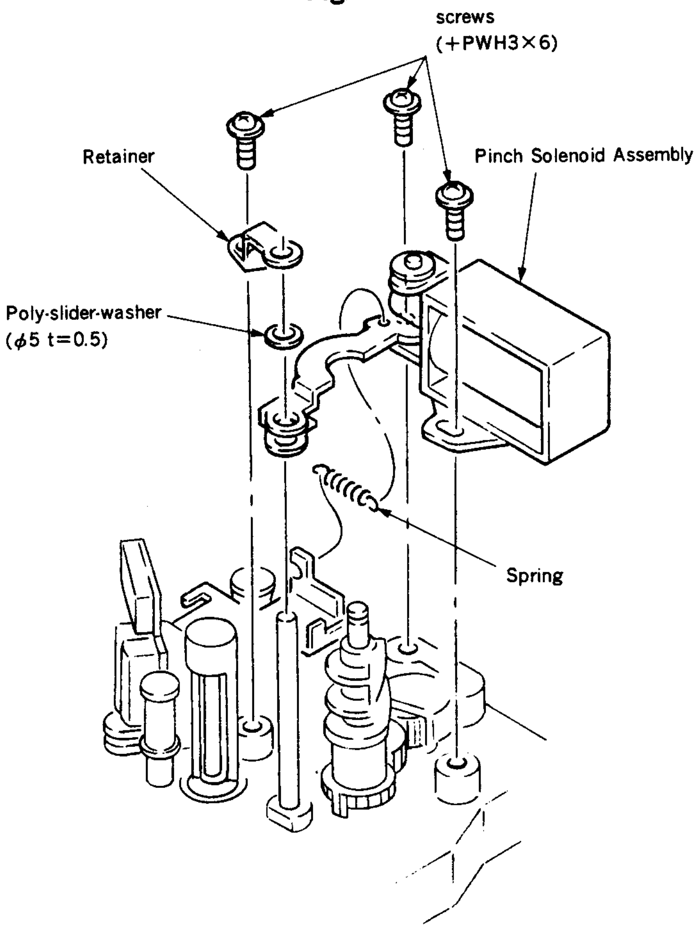

screws
(+PWH3×6)
Retainer
Pinch Solenoid Assembly
Poly-slider-washer
(φ5 t=0.5)
Spring

Fig. 2

(5) Remove the two screws, then remove the solenoid from the solenoid base. (Fig. 3)

(6) Remove the stopper washer, then remove the solenoid pin and the pressure lever from the iron core. (Fig. 3)

Note on installation

①Align the longitudinal hole of the pinch solenoid ass'y with the boss of the mechanical chassis, then screw in the fixing screws but do not tighten them hard. (Fig. 4)

②Insert a flat blade screwdriver at the point indicated by A in the drawing, then turn it clockwise so that the pinch solenoid ass'y moves in the direction of the arrow as far as it will go, and tighten the two screws hard. (Fig. 4)

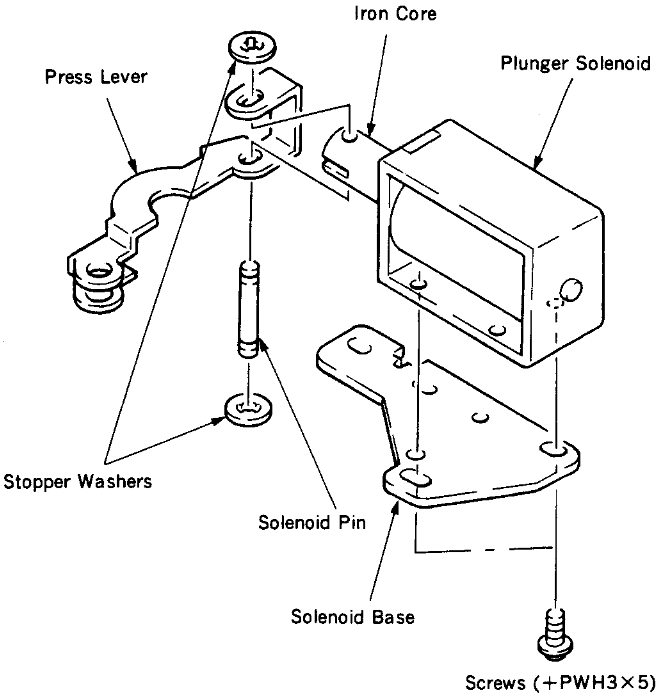

Iron Core
Plunger Solenoid
Press Lever
Stopper Washers
Solenoid Pin
Solenoid Base
Screws (+PWH3×5)

Fig. 3

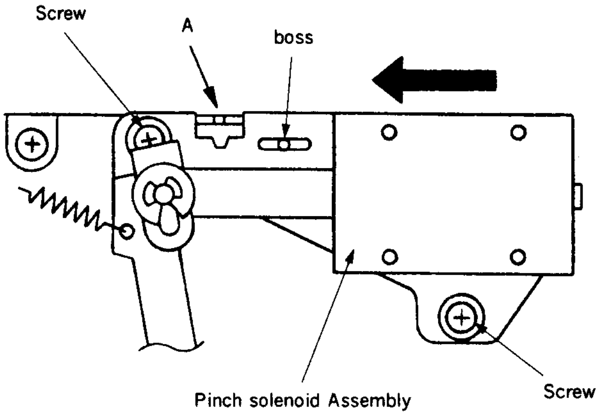

Screw
A
boss
Pinch solenoid Assembly
Screw

Fig. 4

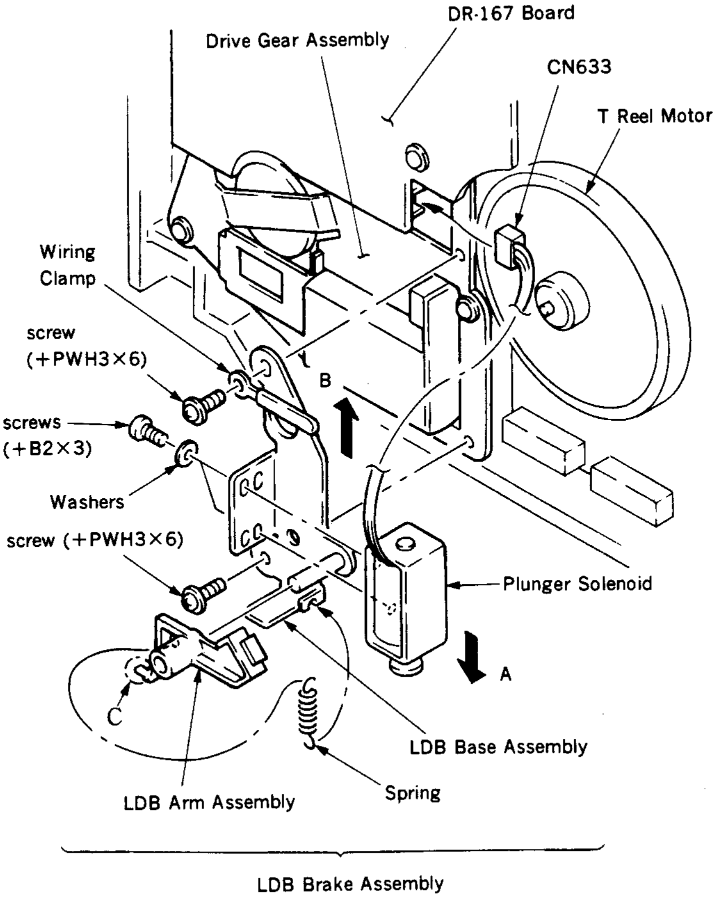
4-32. LDB BRAKE ASS'Y REPLACEMENT

Tool :
MOLYKOTE grease EM-30LG (J-6090-014-A)

(1) Disconnect connector CN633 from the DR-167 board.
(2) Remove the two screws and the wiring clamp, then remove the LDB brake ass'y.
(3) Remove the two screws and the two washers, then remove the plunger solenoid from the LDB base ass'y.
(4) Remove the spring, then pull out the LDB arm ass'y from the LDB base ass'y.

Note on installation

①When installing the plunger solenoid on the LDB base ass'y first temporarily install it with the two screws and two washers, then move it fully in the direction of arrow A and tighten the screws hard.
②When installing the LDB brake ass'y on the drive gear ass'y, temporarily install it with the two screws and the wiring clamp, then move it fully in the direction of arrow B and tighten the screws hard.
③Fix the harness of the plunger solenoid with the wiring clamp in such a way that it does not touch the T reel motor.
④Apply a dab of MOLYKOTE grease to part C shown in the drawing after replacing the LDB arm ass'y with a new one.


DR-167 Board
Drive Gear Assembly
CN633
T Reel Motor
Wiring Clamp
screw (+PWH3×6)
B
screws (+B2×3)
Washers
screw (+PWH3×6)
Plunger Solenoid
A
C
LDB Base Assembly
LDB Arm Assembly
Spring
LDB Brake Assembly

SECTION 5
TORQUE AND TAPE TENSION ALIGNMENT

5-1. S/T REEL TABLE TORQUE ADJUSTMENT

Tools:
Torque gauge (H-7099-039-H)
Torque gauge adapter (H-7099-035-H)
Short clip

Adjustment Procedure:

(1) Remove the cassette compartment according to Sec. 2-2.
(2) Set No.1 and No.8 switches of DIP switch S101/ SS-49 board (J-9) to ON. (Fig. 1)
(3) Short TP304 (D-9) and E5 (C-9) on the SS-49 board with a shorting clip. (Fig. 1)
(4) Press the cassette down switch manually, and while keeping it depressed, turn the POWER switch ON. (Fig. 2)
(5) Put the VTR in the PLAY mode.

S side reel table adjustment

(6) Stop the S side reel table manually, and install the torque meter. (Fig. 3)
(7) Adjust RV303/SS-49 board (C-9) so that the value on the torque meter meet the required specification.

T side reel table adjustment

(8) Stop the T side reel table manually, and install the torque meter. (Fig. 3)
(9) Adjust RV304/SS-49 board (C-9) so that the value on the torque meter meet the required specification.
(10) After completion of adjustments, remove the shorting clip.
(11) Set No.1 and No.8 switches of S101 to OFF.

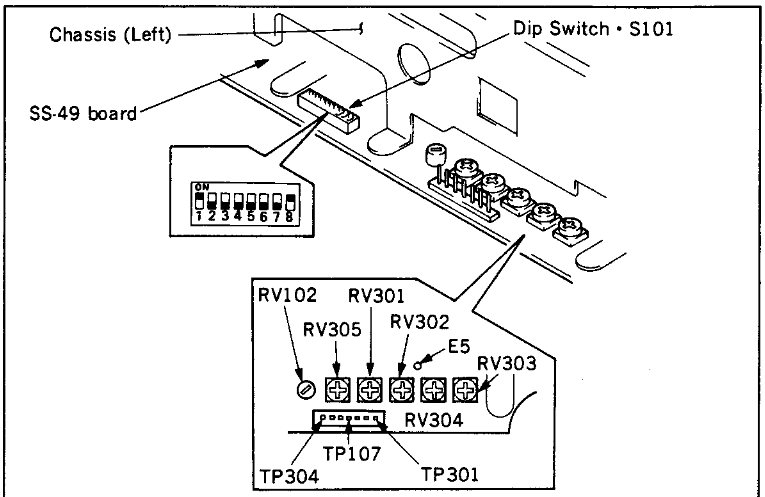

Chassis (Left)
Dip Switch • S101
SS-49 board
ON
1 2 3 4 5 6 7 8
RV102
RV301
RV305
RV302
E5
RV303
RV304
TP107
TP304
TP301

Fig. 1

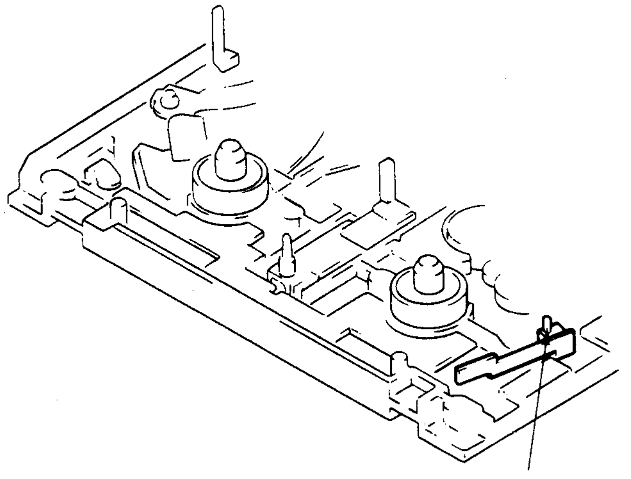

Cassette Down Switch

Fig. 2

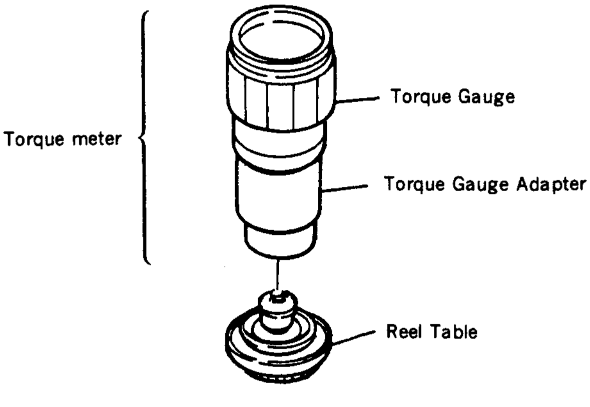

Torque meter
Torque Gauge
Torque Gauge Adapter
Reel Table

Fig. 3

Spec.:
S/T Side $(147\pm5)\times10^{-4}$ N·m $(150\pm5$ g·cm$)$

5-2. TAPE TENSION ADJUSTMENT

Be sure to perform this adjustment after replacing a part of the tape run system, such as the drum or tension regulator. Also, be sure to check the tape tension when performing a periodic check.

Tools :
Tentelometer, T2-H7-UMC
S-VHS cassette tape, T-120

Adjustment Procedure :

(1) To prevent the tape from touching the tentelometer, rotate the tape stabilizer in the direction of the arrow until it strikes the chassis (left), then insert the bamboo skewer, or the like, at point "a" shown in the figure, and fix it in place. (Fig. 1)

(2) Insert a cassette tape (T-120) in the VTR, then put the VTR into the PLAY mode.

(3) Install the tentelometer between the TG-3 guide and the TG-5 guide. (Fig. 1)

(4) Adjust RV301/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 1.

(5) Enter the SEARCH REV mode.

(6) Adjust RV302/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 2.

(7) Enter the PAUSE mode.

(8) Adjust RV305/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 3.

(9) Confirm that each of the tape tensions meet the required specification 1 and 3.
During PLAY mode, tape tension required as Spec. 1, and PAUSE mode, tape tension required as Spec. 3.

(10) Confirm that each of the tape tensions meet the required specification 2 and 3.
During SEARCH REV mode, tape tension required as Spec. 2, and PAUSE mode, tape tension required as Spec. 3.

(11) Remove the tentelometer and bamboo skewer, then press the EJECT button and remove the cassette tape.

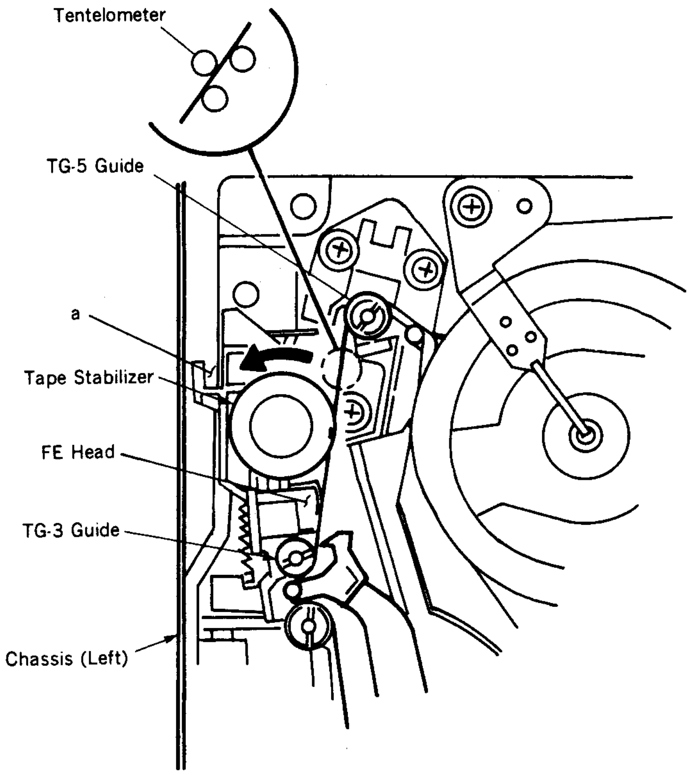


Fig. 1

Spec. 1 : Tape tension in the PLAY mode
[245±25]×10^{-3} N (25±2.5 g)

Spec. 2 : Tape tension in the SEARCH REV mode
[392±25]×10^{-3} N (40±2.5 g)

Spec. 3 : Tape tension in the PAUSE mode
[216±20]×10^{-3} N (22±2 g)

SECTION 6
TAPE RUN ALIGNMENT

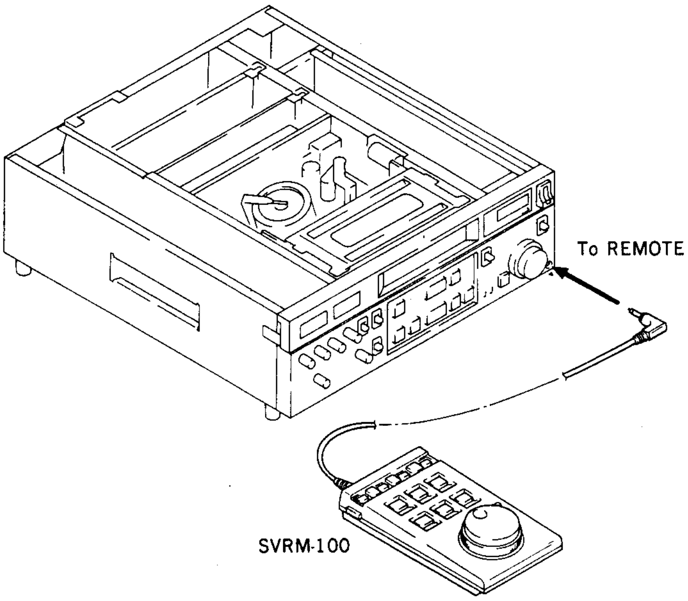
The tape run system has been adjusted before leaving the factory. If a part in the transport is replaced, therefore, the new part should be adjusted carefully to ensure that the tape transport is stable.
This section covers the entire adjustment procedure from coarse adjustment to fine adjustment.
Before commencing adjustment, remove the top panel of the VTR.

[**Adjustment preparations**]

1) Remote controller

The VTR can be also operated by the remote controller (SVRM-100, RM-V200, RM-V100, etc.)

Connecting the remote controller

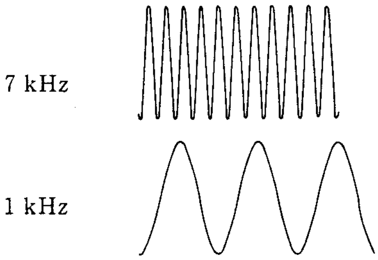


(RM-V100 or RM-V200, SVRM-100)

2) Equipment and tool

- Oscilloscope
- Tentelometer, T2-H7-UMC
- Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
- Small adjustment mirror (J-6080-840-A)
- X value adjustment tool (J-6380-710-A)
- X value adjustment tool connecting cable (See sub-section 6-9) (Must be provided by the service side.)
- RP extension tool (J-6381-370-A)
- S-VHS cassette tapes, T-160 and T-120
- Alignment tape, JVC-MH-2 (H-7099-052-H)
- Alignment tape, KRV-4821PSA (8-192-602-48)
- Alignment tape, KRV-45HPS (Pending)

Signals recorded on the alignment tape

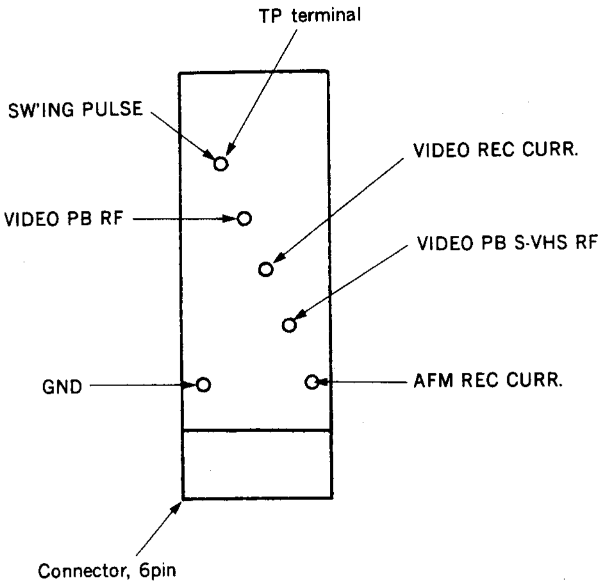
Name (Part No.)	Recording mode	Signals recorded on the tape	
		Video area	Audio area
JVC-MH-2 (H-7099-052-H)	SP	• Stairstep 10 min • No signal 5 min • Color bars 10 min • RF sweep 3 min Markers: 2.0 MHz 4.0 MHz 5.0 MHz	• 7 kHz 10 min • 3 kHz 5 min • 1 kHz (0 dB) 10 min • No signal 3 min
KRV-4821PSA (8-192-602-48)	SP	• 1 MHz (CH-1 only) • 1 V blanking every 60 V } 120 min	• 7 kHz 120 min • 1 kHz 120 min } MIX 
KRV-45HPS (S-VHS) (Pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 s, 400 Hz 15 s (alternatery) • Hi-Fi audio 400 Hz (stereo)

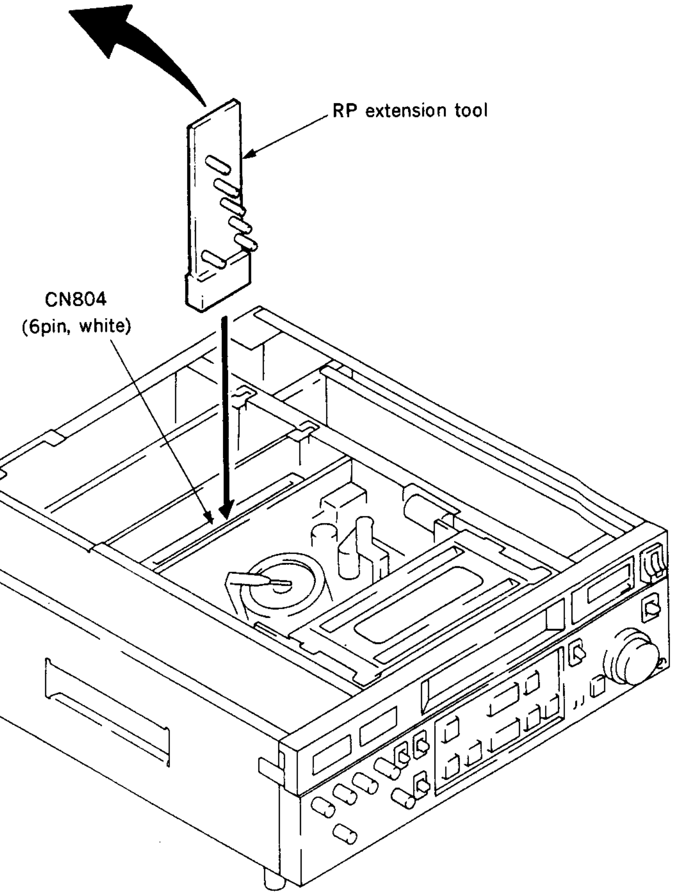
RP extension tool

This extension tool is used to take off the signal output from the check connector CN804 on the RP-62 board so as to enable it to be connected easily to a probe.
It is intended to be inserted into connector CN804.

CN804 output signal

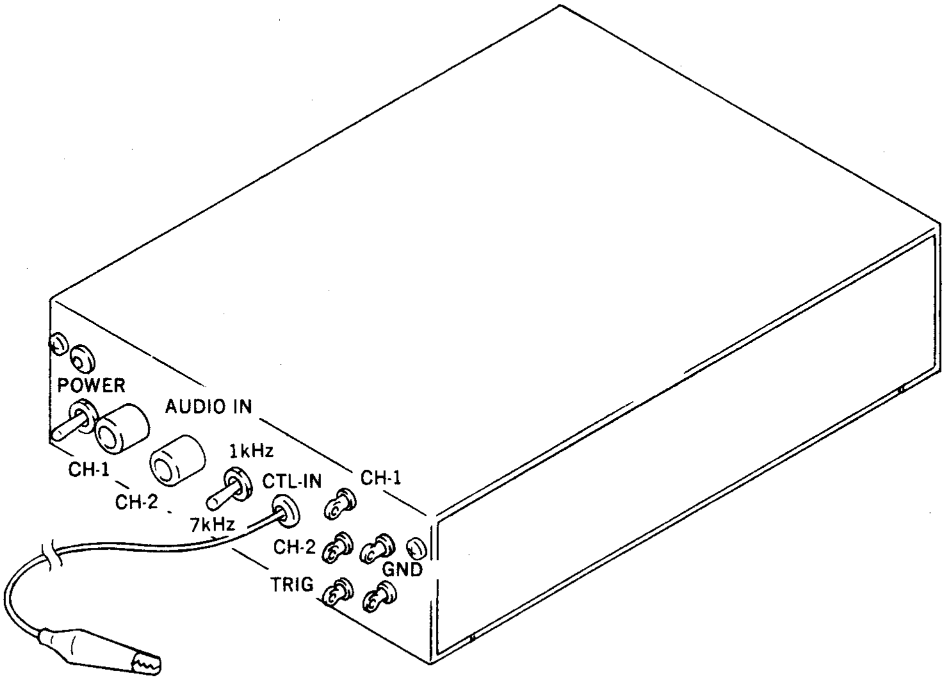
Pin No.	Output Signal
1	AFM REC CURRENT
2	S-VHS • VIDEO PB RF OUT
3	VIDEO REC CURRENT
4	VHS • VIDEO PB RF OUT
5	RF SWITCHING PULSE
6	GND


TP terminal
SW'ING PULSE
VIDEO REC CURR.
VIDEO PB RF
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6pin


RP extension tool
CN804
(6pin, white)

X value adjustment tool

This tool is used when adjusting the height of the audio head, the azimuth, zenith, head-to-tape contact and the X value (position of audio head).
Power is supplied from two internal dry batteries (9V).
When replacing the dry batteries, remove the four screws at the bottom, and open the bottom plate of the tool.
Note:
The batteries will run down quickly if the POWER switch of the tool is left switched ON.

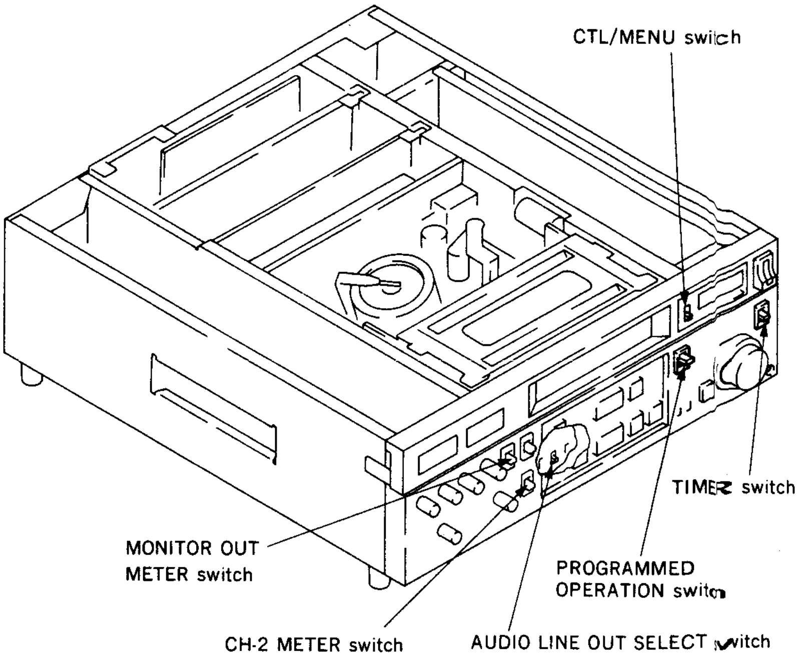

POWER
AUDIO IN
CH-1
CH-2
1kHz
7kHz
CTL-IN
CH-1
CH-2
GND
TRIG

X value adjustment tool

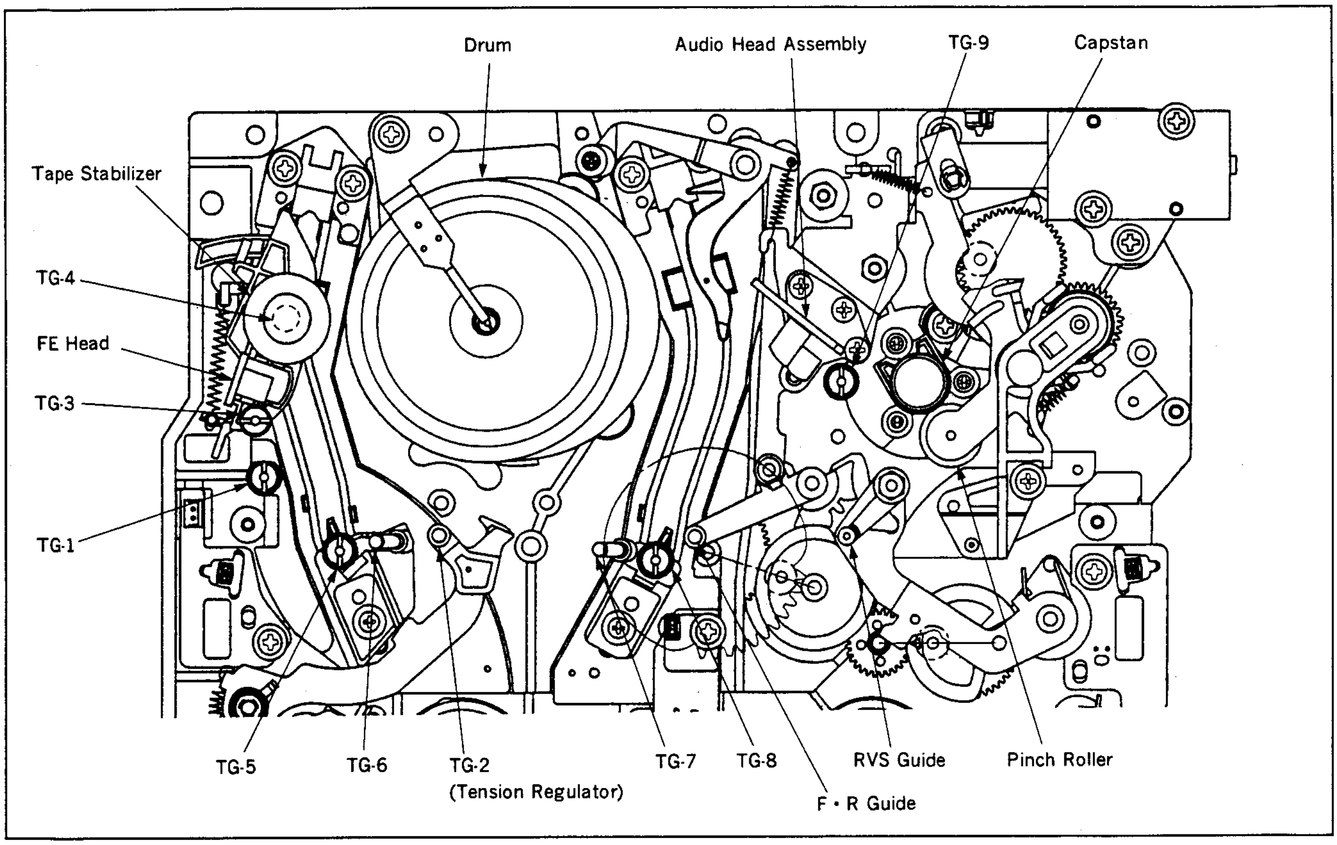
3) Switch setting

Set the switches of the front panel and the sub panel as follow.

	Select Switch	Setting Position
Front Panel	PROGRAMMED OPERATION	OFF
	CTL/MENU	CTL
	TIMER	OFF
	MONITOR OUT METER	NORM
	CH-2 METER	AUDIO
Sub Panel	AUDIO LINE OUT SELECT	NORM

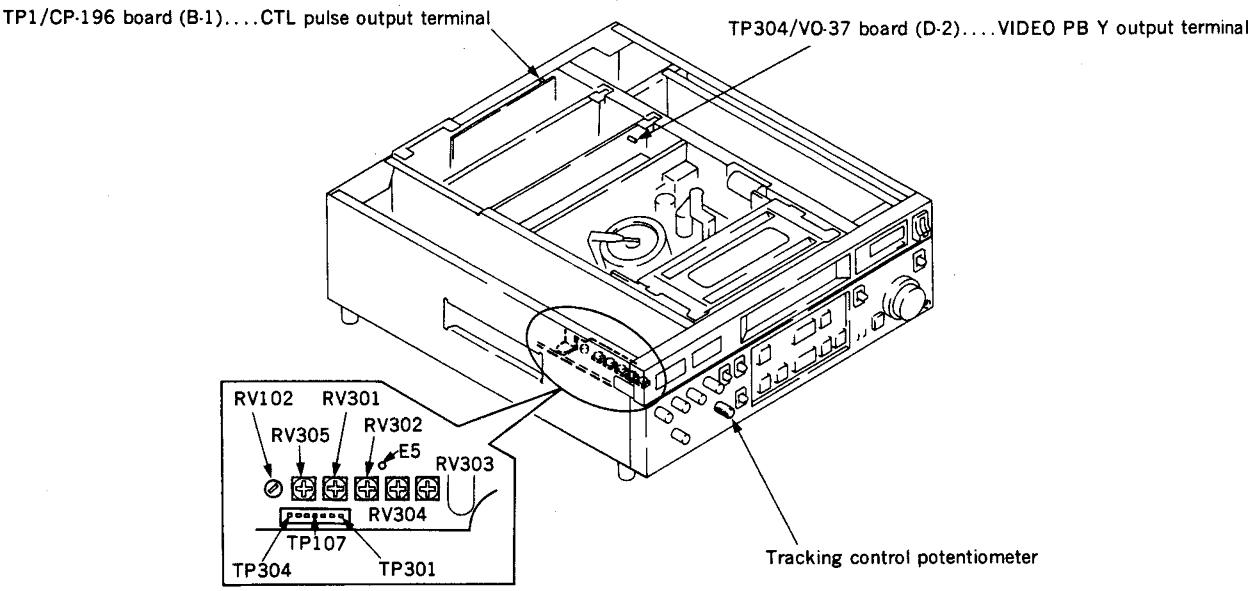

CTL/MENU switch
TIMER switch
MONITOR OUT METER switch
PROGRAMMED OPERATION switch
CH-2 METER switch
AUDIO LINE OUT SELECT switch

[Tape guide layout drawing]


Drum
Audio Head Assembly
TG-9
Capstan
Tape Stabilizer
TG-4
FE Head
TG-3
TG-1
TG-5
TG-6
TG-2
(Tension Regulator)
TG-7
TG-8
RVS Guide
Pinch Roller
F • R Guide

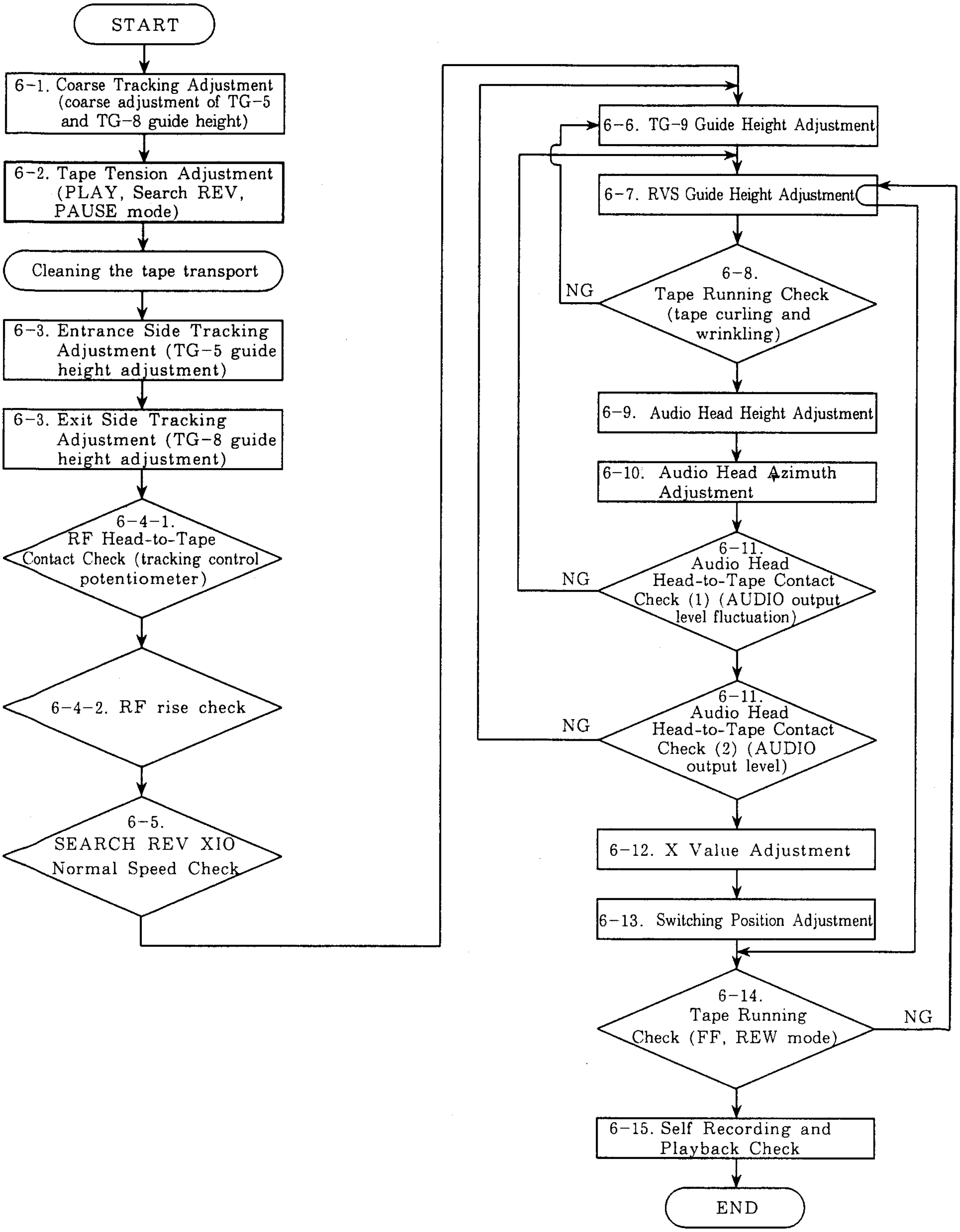
[Position of potentiometers and TP terminals]

The positions of the adjustment potentiometers and TP terminals are shown in the figure below.
(The figure below shows the VTR with the top panel removed.)


TP1/CP-196 board (B-1)....CTL pulse output terminal
TP304/VO-37 board (D-2)....VIDEO PB Y output terminal
RV102
RV301
RV305
RV302
E5
RV303
RV304
TP107
TP304
TP301
Tracking control potentiometer

- RV301....PLAY mode tape tension adjustment potentiometer
- RV302....Search REV mode tape tension adjustment potentiometer
- RV305....PAUSE mode tape tension adjustment potentiometer
- RV102....Switching position adjustment potentimeter

[Adjustment Flow Chart]


START
6-1. Coarse Tracking Adjustment (coarse adjustment of TG-5 and TG-8 guide height)
6-2. Tape Tension Adjustment (PLAY, Search REV, PAUSE mode)
Cleaning the tape transport
6-3. Entrance Side Tracking Adjustment (TG-5 guide height adjustment)
6-3. Exit Side Tracking Adjustment (TG-8 guide height adjustment)
6-4-1. RF Head-to-Tape Contact Check (tracking control potentiometer)
6-4-2. RF rise check
6-5. SEARCH REV XIO Normal Speed Check
6-6. TG-9 Guide Height Adjustment
6-7. RVS Guide Height Adjustment
NG
6-8. Tape Running Check (tape curling and wrinkling)
6-9. Audio Head Height Adjustment
6-10. Audio Head Azimuth Adjustment
NG
6-11. Audio Head Head-to-Tape Contact Check (1) (AUDIO output level fluctuation)
NG
6-11. Audio Head Head-to-Tape Contact Check (2) (AUDIO output level)
6-12. X Value Adjustment
6-13. Switching Position Adjustment
6-14. Tape Running Check (FF, REW mode)
NG
6-15. Self Recording and Playback Check
END

6-1. COARSE TRACKING ADJUSTMENT

Tools :

Oscilloscope
RP extension tool (J-6381-370-A)
Alignment tape (KRV-4821PSA)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)

Adjustment Procedure :

(1) Connect the oscilloscope as follows.
  CH-1 : VIDEO PB RF terminal/RP extension tool
  TRIG : SW'ING PULSE terminal/RP extension tool
  GND : GND terminal/RP extension tool
(2) Playback the alignment tape.
(3) Turn the tracking control potentiometer on the front panel until the center part of the RF waveform is maximum. (Fig. 2)
(4) Turn the upper flange of the TG-5 guide until the RF waveform at the entrance side is virtually flat. (Fig. 3)
(5) Turn the upper flange of the TG-8 guide until the RF waveform at the exit side is virtually flat. (Fig. 4)
(6) Turn the tracking control potentiometer until the center part of the RF waveform is maximum.
(7) Press the EJECT button, and remove the alignment tape.

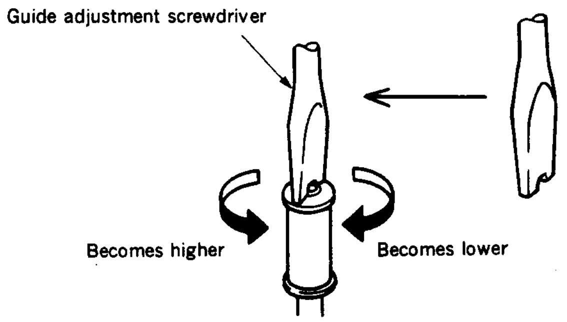

Guide adjustment screwdriver
Becomes higher
Becomes lower

Fig. 1 Tape Guide Height Adjustment Method.

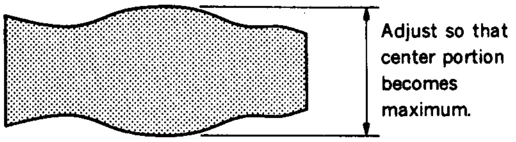

Adjust so that center portion becomes maximum.

Fig. 2

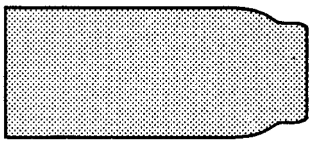


Fig. 3

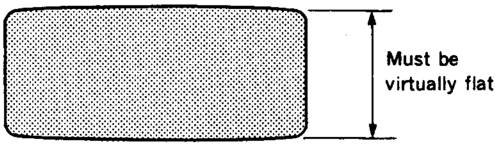

Must be virtually flat

Fig. 4

6-2. TAPE TENSION ADJUSTMENT

Tools :

Tentelometer, T2-H7-UMC
S-VHS cassette tape, T-120

Adjustment Procedure :

(1) To prevent the tape from touching the tentelometer, rotate the tape stabilizer in the direction of the arrow until it strikes the chassis (left), then insert the bamboo skewer, or the like, at point "a" shown in the figure, and fix it in place. (Fig. 1)
(2) Insert a cassette tape (T-120) in the VTR, then put the VTR into the PLAY mode.
(3) Install the tentelometer between the TG-3 guide and the TG-5 guide. (Fig. 1)
(4) Adjust RV301/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 1.
(5) Enter the SEARCH REV mode.
(6) Adjust RV302/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 2.
(7) Enter the PAUSE mode.
(8) Adjust RV305/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 3.
(9) Confirm that each of the tape tensions meet the required specification 1 and 3. During PLAY mode, tape tension required as Spec. 1, and PAUSE mode, tape tension required as Spec. 3.
(10) Confirm that each of the tape tensions meet the required specification 2 and 3. During SEARCH REV mode, tape tension required as Spec. 2, and PAUSE mode, tape tension required as Spec. 3.
(11) Remove the tentelometer and bamboo skewer, then press the EJECT button and remove the cassette tape.

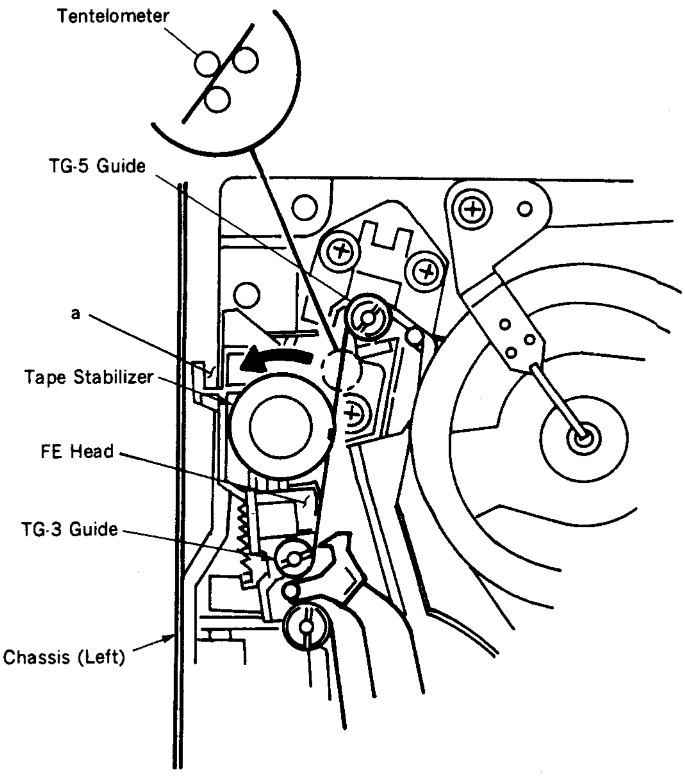


Fig. 1

Spec. 1 : Tape tension in the PLAY mode
[245±25]×10^{-3} N (25±2.5 g)

Spec. 2 : Tape tension in the SEARCH REV mode
[392±25]×10^{-3} N (40±2.5 g)

Spec. 3 : Tape tension in the PAUSE mode
[216±20]×10^{-3} N (22±2 g)

6-3. TRACKING ADJUSTMENT

Tools:

Oscilloscope
RP extension tool (J-6381-370-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Alignment tape (KRV-4821PSA)

Cleaning prior to adjustment:

Clean the following parts with a cleaning piece moistened with cleaning fluid.

- TG-1 to TG-9, RVS and F • R tape guides
- Audio head, FE head, capstan, pinch roller
- Rotary head, tape run face of upper and lower drums

[Note: Method of cleaning the rotary head]
Press the cleaning piece gently against the rotary head, then rotate the upper drum slowly in the counterclockwise direction with the fingers to clean the head.

Adjustment Procedure:

(1) Connect the oscilloscope as follows.
CH-1: VIDEO PB RF terminal/RP extension tool
TRIG: SW'ING PULSE terminal/RP extension tool
GND: GND terminal/RP extension tool

(2) Playback the alignment tape.

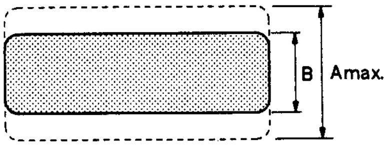
Entrance side adjustment:

(3) Turn the tracking control potentiometer on the front panel until the RF waveform is 70 to 80% of maximum. (Fig. 1)

(4) Turn the upper flange of the TG-5 guide clockwise until the RF waveform at the left hand side is as shown in Fig. 2.

(5) Turn the upper flange on the TG-5 guide in the counterclockwise direction until the RF waveform at the left hand side is flat. (Fig. 3)
Note:
- Complete the height adjustment of TG-5 with the guide turned counterclockwise.

(6) Turn the tracking control potentiometer on the front panel counterclockwise until the RF waveform is 70 to 80% of maximum, then confirm that the RF waveform at the left hand side is virtually flat. (Fig. 4)



$\frac{B}{Amax.} = 0.7$ to 0.8

Fig. 1

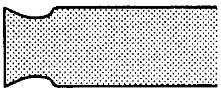


Fig. 2

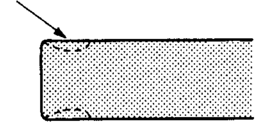
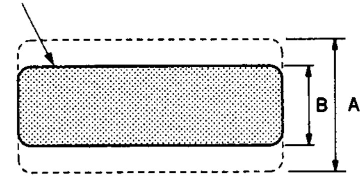


Fig. 3



Spec.:
RF waveform at entrance side must be virtually flat when $\frac{B}{Amax.} = 0.7$ to 0.8.

Fig. 4

Exit side adjustment :

(7) Turn the tracking control potentiometer on the front panel until the RF waveform is 70 to 80% of maximum. (Fig. 1)

(8) Turn the upper flange of the TG-8 guide clockwise until the RF waveform on the right hand side is as shown in Fig. 5.

(9) Turn the upper flange of the TG-8 guide counterclockwise until the RF waveform on the right hand side is Fig. 6.

Note:

- Complete the height adjustment of TG-8 with the guide turned counterclockwise.

(10) Confirm that the RF waveform on the right hand side is Fig. 6 when the mode is switched from STOP to PLAY.

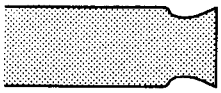
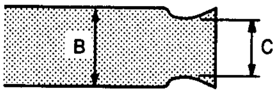


Fig. 5



$\frac{C}{B}$=0.85~0.95

Fig. 6

6-4. CHECKING AFTER TRACKING ADJUSTMENT

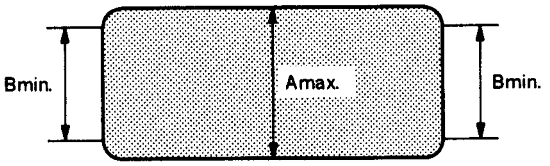
Tools :

Oscilloscope
RP extension tool (J-6381-370-A)
Alignment tape (KRV-4821PSA)

- Connect the oscilloscope as follows.
  CH-1 : VIDEO PB RF terminal/RP extension tool
  TRIG : SW'ING PULSE terminal/RP extension tool
  GND : GND terminal/RP extension tool

6-4-1. RF Head-to-Tape Contact Check

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel until the center of the RF waveform is maximum.
(3) Confirm that the RF waveform meet the specification.



Spec. :
$\frac{\text{Bmin.}}{\text{Amax.}} \geq 0.8$

6-4-2. RF Rise Check

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel until the center of the RF waveform becomes maximum.
(3) Put the VTR in each of the following modes in turn, and confirm that the rise time of the RF waveform meet the specification. (Fig. 1)
①SEARCH REV → PLAY
②SEARCH FWD → PLAY
③STOP → PLAY
(4) Enter the SEARCH REV mode, and confirm that there is no missing of the RF waveform at the entrance side. (Fig. 2)

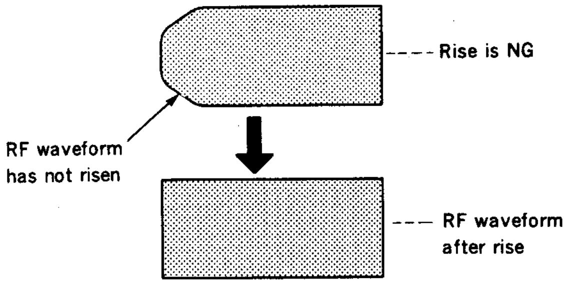


Fig. 1

Spec. :	RF rise time
①SEARCH REV → PLAY	Within 3 s
②SEARCH FWD → PLAY	Within 3 s
③STOP → PLAY	Within 3 s

• The rise time is the time from when the RF waveform appears on the oscilloscope.

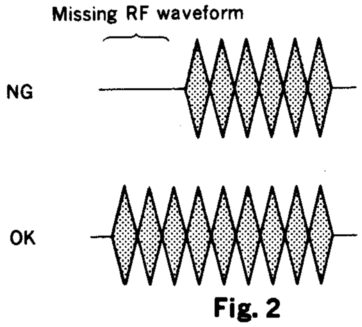


Fig. 2

6-5. SEARCH REV x10 NORMAL SPEED CHECK

Tools :

Oscilloscope
Alignment tape (KRV-45HPS)
RP extension tool (J-6381-370-A)
Remote controller (SVRM-100, RM-V100, or RM-V200)

Checking Procedure :

(1) Connect the oscilloscope as follows.
  CH-1 : VIDEO PB S-VHS RF terminal/RP extension tool
  TRIG : SW'ING PULSE terminal/RP extension tool
  GND : GND terminal/RP extension tool
(2) Load the alignment tape in the VTR.
(3) Using the remote controller, enter the SEARCH REV mode (x10 times normal speed), and play back the color bars that were recorded in the SP mode.
(4) Confirm that an RF waveform appears at SP1, SP2, EP1 and EP2. (Fig. 1) Also, confirm that an RF waveform appears at the entrance side. (Fig. 2) (Fig. 3)

If there is not appear the RF waveform.

Check the following points.

①Does the tape curl or become wrikled between the TG-5 guide, drum and the TG-8 guide?
If curling or wrinkling occurs → re-adjust the height of the TG-5 and TG-8 guides.

②Check the circuit between pin 23 of IC201 (D-2) and pin 2 of CN804 on the RP board.

③Confirm that the voltage input to pin 28 of IC201 on the RP board is between 2.15 and 2.7 V dc.

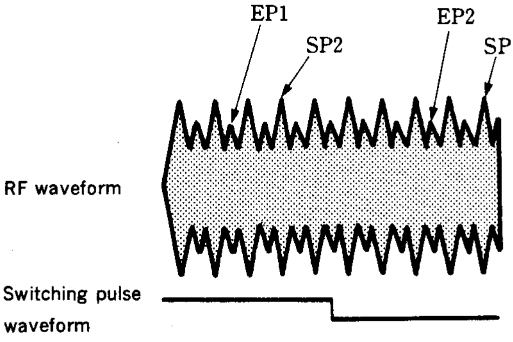

EP1
SP2
EP2
SP1
RF waveform
Switching pulse waveform

Fig. 1

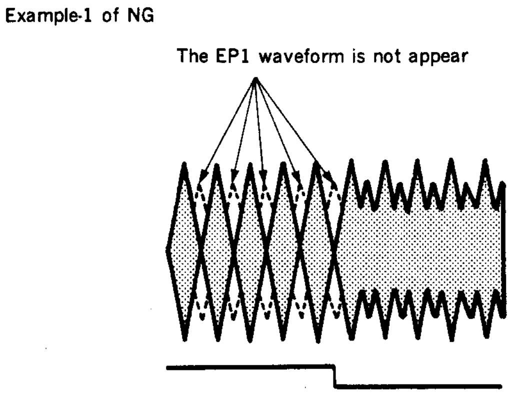

Example-1 of NG
The EP1 waveform is not appear

Fig. 2

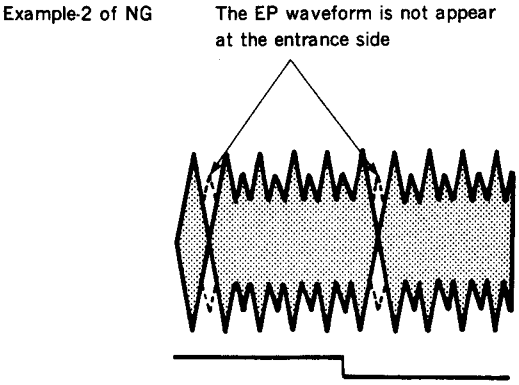

Example-2 of NG
The EP waveform is not appear at the entrance side

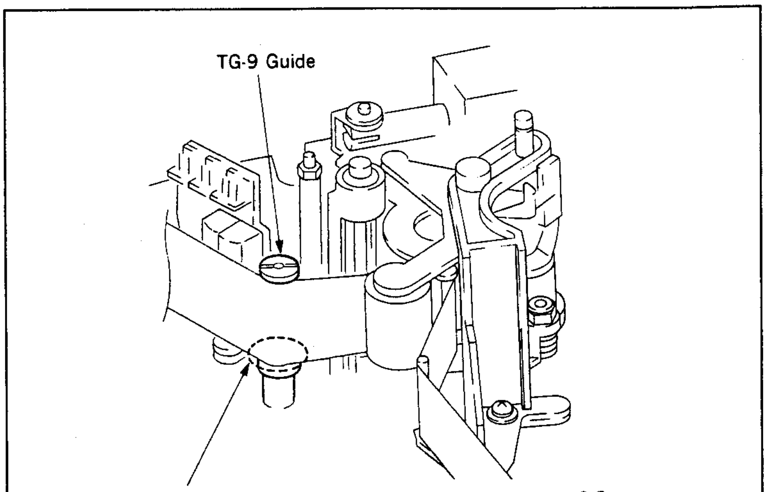
Fig. 3

6-6. TG-9 GUIDE HEIGHT ADJUSTMENT

Tools:
S-VHS cassette tape (T-160)
Guide adjustment screwdriver (J-6082-044-A or
J-6080-811-A)

Adjustment Procedure:

(1) Insert a cassette tape (T-160) in the VTR, then put the VTR in the PLAY mode.
(2) Turn the upper flange of the TG-9 guide, and pass the tape along the lower flange.



Must be no lift up. Also, curling must be no more than 0.5 mm.

6-7. RVS GUIDE HEIGHT ADJUSTMENT

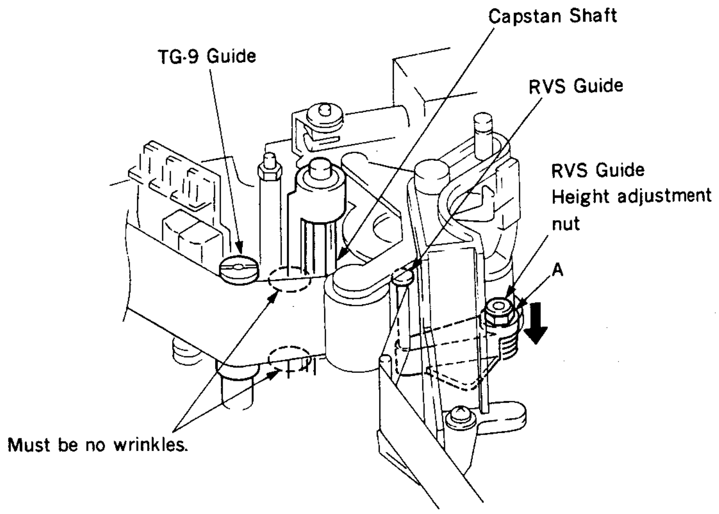
Tools:
S-VHS cassette tape (T-160)
Box screwdriver (width 5.5 mm)

Adjustment Procedure:

(1) Enter the Search REV mode using the first 10 minutes or less of the tape.
(2) Turn the RVS guide height adjustment nut until wrinkling of the tape between the TG-9 guide and the capstan shaft that occurs when the VTR is switched from the search REV mode to the search FWD mode, or vice-versa, disappears in less than 3 seconds.

Direction of adjustment of RVS guide height adjustment nut

If the wrinkling of the tape decreases when part A indicated in the figure (bottom of adjustment nut) is pressed in the direction of the arrow, turn the RVS guide height adjustment nut clockwise. If the wrinkling increases, turn the nut counterclockwise.



6-8. TAPE RUNNING CHECK (check to be performed subsequent to adjustments of sections 6-1 to 6-7)

Tool:
S-VHS cassette tape, T-160

Checking Procedure:

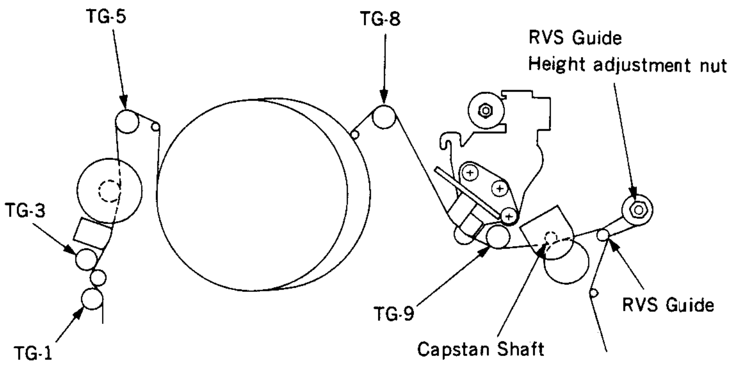
(1) Insert a cassette tape (T-160) in the VTR.

(2) Confirm that the curling of the tape at the TG-1, TG-3, TG-5, TG-8 and TG-9 guides in both the Search FWD and Search REV modes meet the specification.

If the specification is not satisfied:

(3) Re-adjust the TG-9 and RVS guide height according to sub-sections 6-6 and 6-7.

(4) Check step (2).


TG-5
TG-8
RVS Guide
Height adjustment nut
TG-3
TG-9
Capstan Shaft
RVS Guide
TG-1

Spec.:
TG-1, TG-3, TG-5, TG-8, TG-9 Guides ......Tape curling must be within 1mm.

6-9. AUDIO HEAD HEIGHT ADJUSTMENT

Tools :

Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape (KRV-4821PSA or JVC-MH-2)
Box screwdriver (width 5.5 mm)
Connecting cables (two) (to be provided by the service side)....Fig. 1

Connecting the tool :

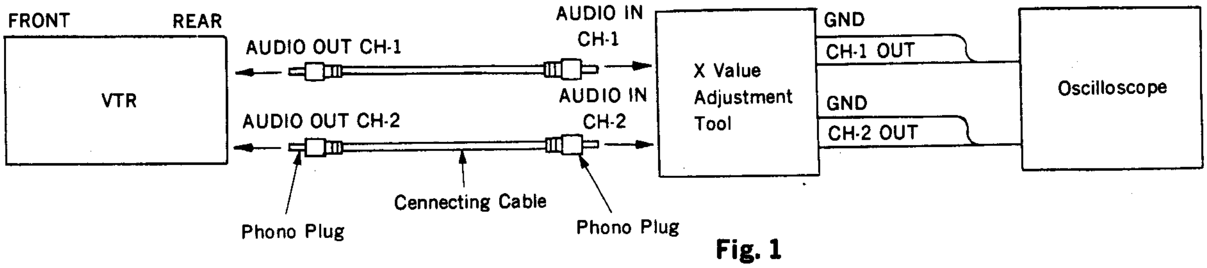

FRONT
REAR
VTR
AUDIO OUT CH-1
AUDIO OUT CH-2
AUDIO IN CH-1
AUDIO IN CH-2
X Value Adjustment Tool
GND
CH-1 OUT
GND
CH-2 OUT
Oscilloscope
Phono Plug
Cennecting Cable
Phono Plug

Fig. 1

Adjustment Procedure :

(1) Set the switch on the X value adjustment tool to the 1 kHz side.
(2) Turn the POWER switch of the X value adjustment tool ON.
(3) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 1 kHz part.)
(4) Turn the audio head height adjustment nut until the level of both CH-1 and CH-2 is maximum. (Fig. 2, Fig. 3)

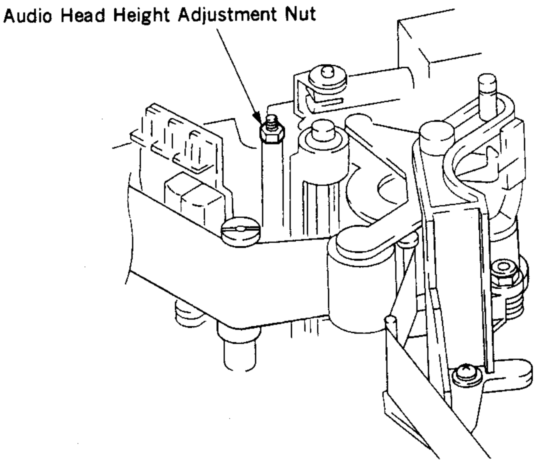

Audio Head Height Adjustment Nut

Fig. 2

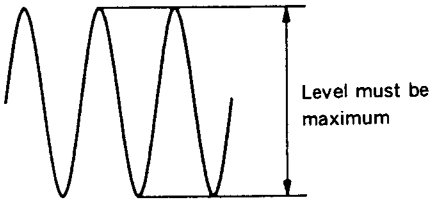

Level must be maximum

Fig. 3

6-10. AUDIO HEAD AZIMUTH ADJUSTMENT

Tools :

Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape, KRV-4821PSA or JVC-MH-2
Connecting cables (two) (See sub-section 6-9.)

Connecting the tool : Same as sub-section 6-9

Adjustment Procedure :

(1) Set the switch on the X value adjustment tool to the 7kHz side.

(2) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 7KHz part.)

Output level adjustment

(3) Turn the azimuth adjustment screw until the resurge waveform on the oscilloscope meet the specification 1. (Fig. 1, Fig. 2)

Azimuth adjustment

(4) Turn the azimuth adjustment screw until the resurge waveform on the oscilloscope meet the specification 2. (Fig. 2)

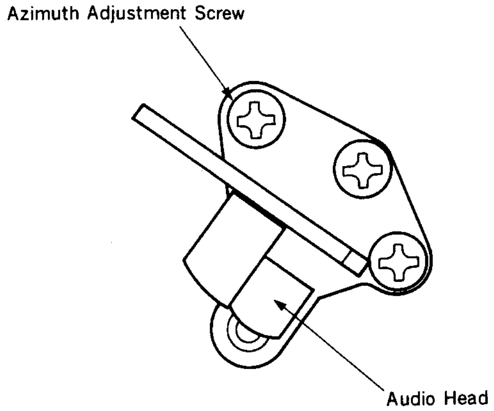


Fig. 1

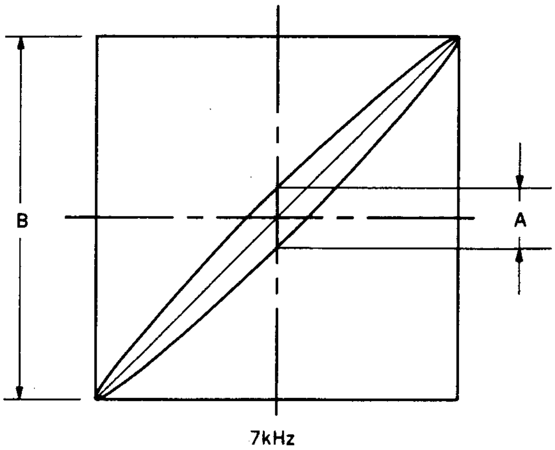


Fig. 2

Spec. 1 :
B must be the maximum level.

Spec. 2 :
A must be no more than 1cm when level B is 6cm.

6-11. AUDIO HEAD HEAD-TO-TAPE CONTACT CHECK

Tools:
Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape KRV-4821PSA or JVC-MH-2
Connecting cables (two) (See sub-section 6-9.)

Connecting the tool: Same as Sec. 6-9

Checking Procedure:
(1) Set the switch on the X value adjustment tool to the 7KHz side.
(2) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 7KHz part.)

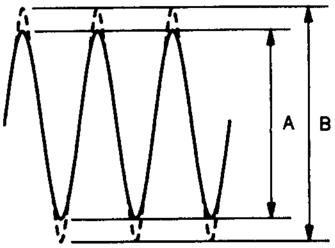
Level fluctuation check
(3) Confirm that the level fluctuation of both CH-1 and CH-2 meet the specification. (Fig. 1)

If the specification is not satisfied:
(4) Turn the TG-9 guide counterclockwise until the specification is satisfied. (Fig. 2) (Tape curling must be no more than 0.5mm.)
(5) Return to Sec. 6-7 and repeat adjustment up to Sec. 6-10.
(6) Check step (3).

Output level check
(7) Press the top of the tape (AUDIO track part) as indicated by the arrow gently with the tip of the finger, and confirm that the increase in level conforms to the specification for both CH-1 and CH-2. (Fig. 2 and Fig. 3)

If the specification is not satisfied:
(8) Turn the zenith adjustment screw of the audio head 90° clockwise.
(9) Return to Sec. 6-6 and repeat adjustment up to Sec. 6-10.
(10) Check steps (3) and (7).

Level Fluctuation



Spec.:
A≧0.9B

Fig. 1

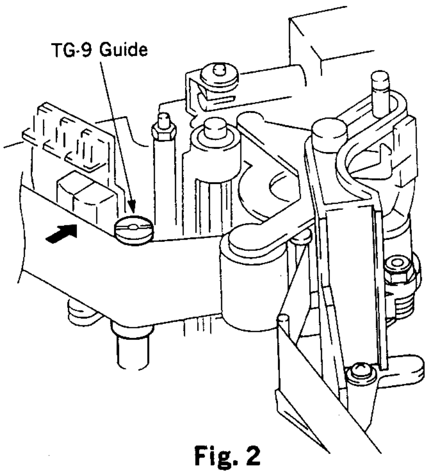
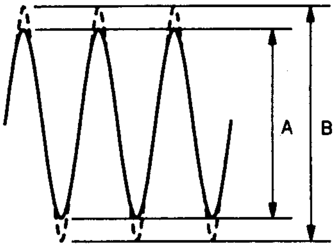


Fig. 2

Output Level



Spec.:
B≦1.2A

A: Initial level
B: Level when the tape is pressed with the finger.

Fig. 3

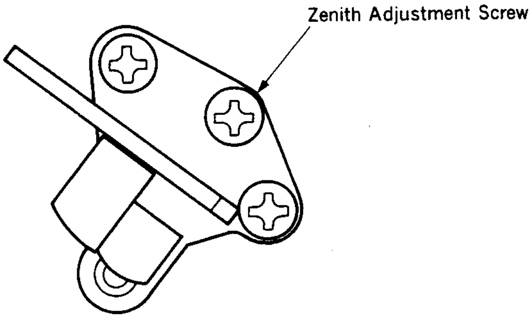


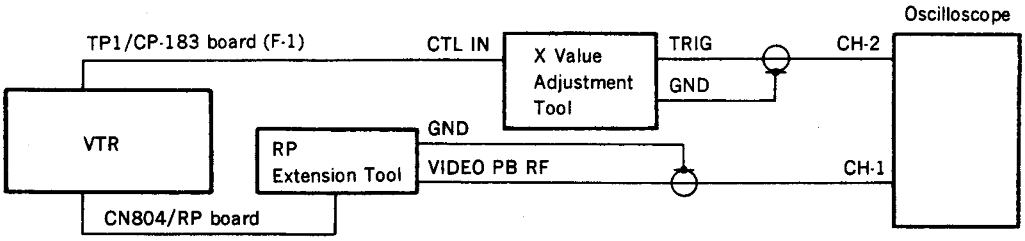
Fig. 4

6-12. X VALUE ADJUSTMENT (AUDIO HEAD POSITION ADJUSTMENT)

Tools :

Oscilloscope
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Alignment tape (KRV-4821PSA)
Box screwdriver (width 5.5 mm)
Connecting cable

Connecting the tool :


TP1/CP-183 board (F-1)
CTL IN
X Value Adjustment Tool
TRIG
GND
Oscilloscope
CH-2
VTR
RP Extension Tool
GND
VIDEO PB RF
CH-1
CN804/RP board

Change mode of oscilloscope from "TRIG MODE" to "NORM".

Adjustment Procedure :

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel to the 「FIXED」 position.
(3) Turn the AC adjustment screw until the positions of the CTL waveform and RF waveform meet the specification 1. (Fig. 1 and Fig. 2)
(4) Change the connection to the oscilloscope as follows.
TRIG : SW'ING PULSE terminal/RP extension tool
(5) Turn the AC adjustment screw until the center of the RF waveform is the maximum level. Confirm that the RF waveform meet the specification 2. (Fig. 3)
(6) Turn the tracking control potentiometer on the front panel left and right, and confirm that the center of the RF waveform is the maximum level when the potentiometer is at the 「FIXED」 position. (specification 3)

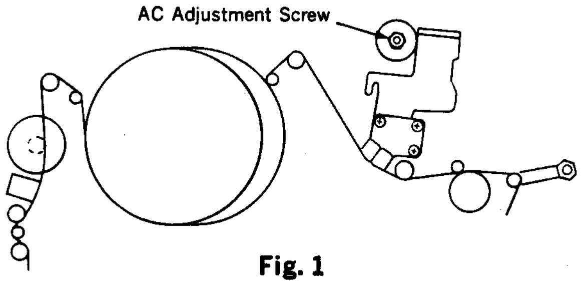

AC Adjustment Screw

Fig. 1

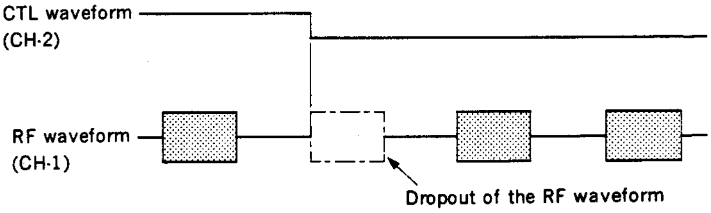
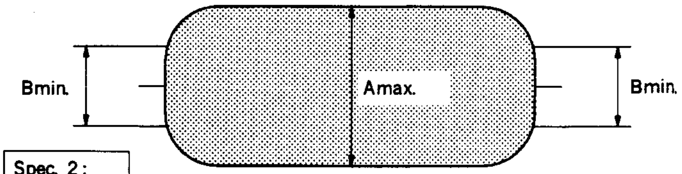

CTL waveform
(CH-2)
RF waveform
(CH-1)
Dropout of the RF waveform

Fig. 2

Spec. 1 :
The point where the RF waveform has dropout must coincide with the falling edge of the CTL waveform.
If the RF waveform dropout point has shifted to the right at the CTL datum....Turn the AC adjustment screw counterclockwise.
If the RF waveform dropout point has shifted to the left at the CTL datum....Turn the AC adjustment screw clockwise.


Bmin.
Amax.
Bmin.

Spec. 2 :
$\frac{Bmin.}{Amax.} \geq 0.8$

Fig. 3

Spec. 3 :
The center part of the RF waveform must be the maximum level when the tracking control potentiometer is at the 「FIXED」 position.

6-13. SWITCHING POSITION ADJUSTMENT

Tools:
Oscilloscope
RP extension tool (J-6381-370A)
Alignment tape (JVC-MH-2)

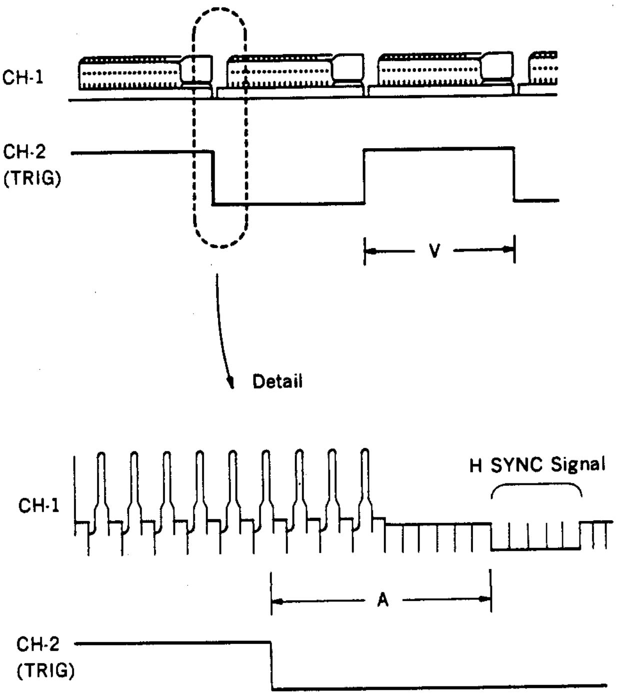
Adjustment Procedure:

(1) Connect the oscilloscope as follows.
CH-1: TP-304/VO board (D-2)
TRIG: SW'ING PULSE terminal/RP extension tool
GND: GND terminal/RP extension tool

(2) Playback the color bar part of the alignment tape.

(3) Set the tracking control potentiometer on the front panel to the 「FIXED」 position.

(4) Turn RV102 (D-9) on the SS board until the specification is satisfied.



Spec.:
A=6.5±0.5 H
(416±32 μs)

6-14. TAPE RUNNING CHECK (FF, REW MODE)

Tool :

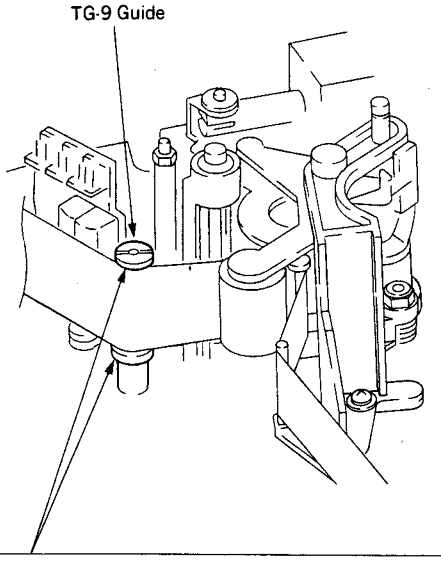
S-VHS cassette tape, T-160

Checking Procedure :

(1) Insert the cassette tape (T-160) into the VTR.
(2) Press the FF button.
(3) Confirm that the tape travels without riding up on the upper or lower flange of the TG-9 guide for about 15 seconds after the VTR goes into the FF mode.
(4) Press the REW button.
(5) Confirm that the tape travels without riding up on the upper or lower flange of the TG-9 guide for about 15 seconds after the VTR goes into the REW mode.

If specification is not satisfied :

(6) Re-adjust the RVS guide height according to sub-section 6-7.
(7) Check steps (2) to (5).



Spec. :
The tape must not ride up on the upper or lower flange.

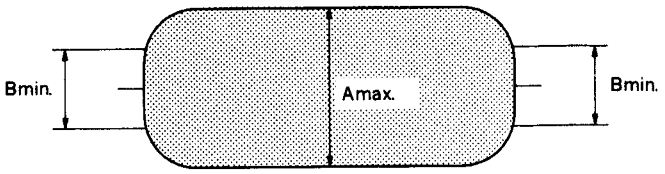
6-15. SELF RECORDING/PLAYBACK CHECK

Tools :

Oscilloscope
S-VHS cassette tape, T-120
RP extension tool (J-6381-370-A)

Checking Procedure :

(1) Connect the oscilloscope as follows.
  CH-1 : VIDEO PB S-VHS RF terminal/RP extension tool
  TRIG : SW'ING PULSE terminal/RP extension tool
  GND : GND terminal/RP extension tool
(2) Set the tracking control potentiometer on the front panel to the 「FIXED」 position.
(3) Perform recording under no-signal conditions using the center part of the cassette tape (T-120).
(4) Confirm that the playback RF waveform meet the specification. (Fig. 1)
(5) After tape run adjustment has been completed, apply locking compound to the AC adjustment screw, and also the audio head azimuth and zenith adjustment screw. (Fig. 2)


Bmin.
Amax.
Bmin.

Spec. : $\frac{\text{Bmax.}}{\text{Amax.}} \geqq 0.7$

Fig. 1

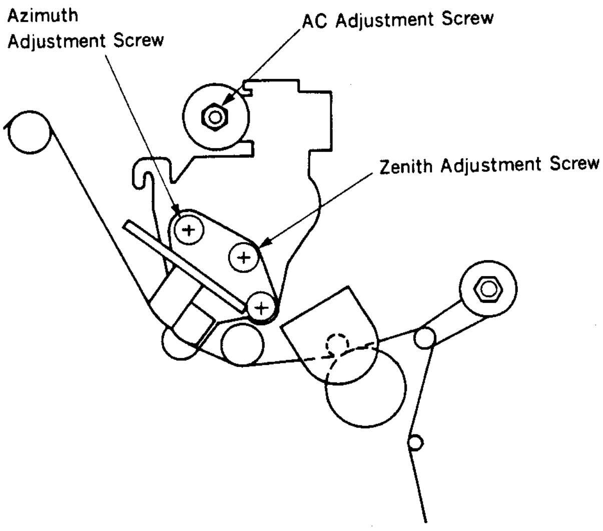

Azimuth Adjustment Screw
AC Adjustment Screw
Zenith Adjustment Screw

Fig. 2

SECTION 7
GENERAL INFORMATION FOR ELECTRICAL ALIGNMENTS

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RV801	EQ2 GAIN	10-13
RV802	EQ3 GAIN	10-14
RV860	NR IN CHROMA LEVEL	10-16

MT-73 board		Page
RV1	CH-1 AUDIO LEVEL METER	9-2
RV2	CH-2 AUDIO LEVEL METER	9-2

NR-40A board		Page
RV101	BURST PHASE-1	10-17
RV102	BURST PHASE-2	10-17
RV103	QUASI BURST LEVEL	10-18
RV202	2H CCD PHASE	10-18
RV203	NOISE CANCEL 4.43 NTSC LEVEL	10-19
RV204	2H CCD LEVEL	10-18

RP-62A board		Page
RV201	S-VHS Y RF LEVEL	10-22

SS-49C board		Page
RV101	BACK-UP VOLTAGE LEVEL	8-1
RV500	CAPSTAN FG (A) DUTY RATE	8-2
RV502	CAPSTAN STOP SERVO	8-2
RV503	CAPSTAN FG (B) DUTY RATE	8-1

VO-37A board		Page
RV30	NR IN Y LEVEL	10-8
RV101	Y AGC LEVEL	10-2
RV102	N-VHS FM DEVIATION	10-9
RV103	S-VHS FM DEVIATION	10-10
RV104	S-VHS WHITE CLIP	10-6
RV105	S-VHS DEMOD Y LEVEL	10-7
RV106	N-VHS DEMOD Y LEVEL	10-7
RV107	S-VHS SYNC CHIP CARRIER SET	10-10
RV108	S-VHS DARK CLIP	10-6
RV109	N-VHS SYNC CHIP CARRIER SET	10-9
RV202	SUB EMPHASIS LEVEL	10-5
RV210	S-VHS Y REC CURRENT	10-19
RV211	N-VHS Y REC CURRENT	10-20
RV260	S-VHS CHROMA REC CURRENT	10-20
RV310	Y IN (D/A) LEVEL	10-4
RV311	CHROMA IN (D/A) LEVEL	10-5
RV401	NR OUT CHROMA LEVEL	10-16
RV402	NR OUT Y LEVEL	10-8
RV480	MIX Y LEVEL	10-3
RV481	MIX CHROMA LEVEL	10-3
RV482	S-Y OUTPUT LEVEL	10-2

7-2. EQUIPMENT USED FOR ELECTRICAL ADJUSTMENT

It is recommended to use either the equipment described below or equivalents as measure equipment and signal generator.

[Measure Equipment Required]

- Oscilloscope (TEKTRONIX 2445B/150 MHz or more)
- Waveform Monitor/Vector Scope (TEKTRONIX 1751A)
- Audio Level Meter (HEWLETT PACKARD HP3400)
- Frequency Counter (ADVANTEST TR5821AK)
- Digital Voltmeter
- Color Monitor (SONY PVM Series with H-V Delay)

[Signal Generator]

- Multiformat Signal Generator (TEKTRONIX TSG-131 with S-VIDEO OUT)
- Audio Signal Generator (HEWLETT PACKARD HP8904)

[Tool]

- RP Extension Tool (SONY Part No. J-6381-370-A)
- Video Cable with S Connector (SONY YC-50KV)
- Y/C Delay Adjustment Tool (SONY Part No. J-6381-910-A)
- Alignment Tape

<NTSC>
  KRV-35NF (SONY Part No. 8-192-603-51)
  KRV-51HN (SONY Part No. 8-192-605-21)
<PAL>
  KRV-39PF (SONY Part No. 8-192-603-96)
  KRV-45PS (N-VHS) (SONY Part No.: pending)
  KRV-45HPS (S-VHS) (SONY Part No.: pending)

- Blank Tape

  N-VHS Tape (GR-120KG: SONY Part No. 8-896-024-94)
  S-VHS Tape

<Note> See SECTION 6. TAPE RUN ALIGNMENTS (page 6-3) for how to use the RP extension tool.

7-3. ELECTRICAL ADJUSTMENT ASSOCIATED WITH INSPECTION AND MAINTENANCE

7-3-1. Adjustment for Drum Ass'y or Upper Drum Ass'y Replacement

9-4. AFM PB RF Level Adjustment
9-5. AFM REC RF Level Adjustment
10-31. S-VHS Y REC Current Adjustment
10-32. N-VHS Y REC Current Adjustment
10-33. S-VHS Chroma REC Current Adjustment
10-34. Overall Y/C Delay Adjustment
10-35. Overall Y RF Level Adjustment

7-3-2. Adjustment for Audio Head Ass'y Replacement

9-8. LAU PB Level Adjustment
9-9. LAU PB Frequency Response Adjustment
9-11. LAU REC Level Adjustment
9-12. CH-1 Crosstalk Canceller Adjustment

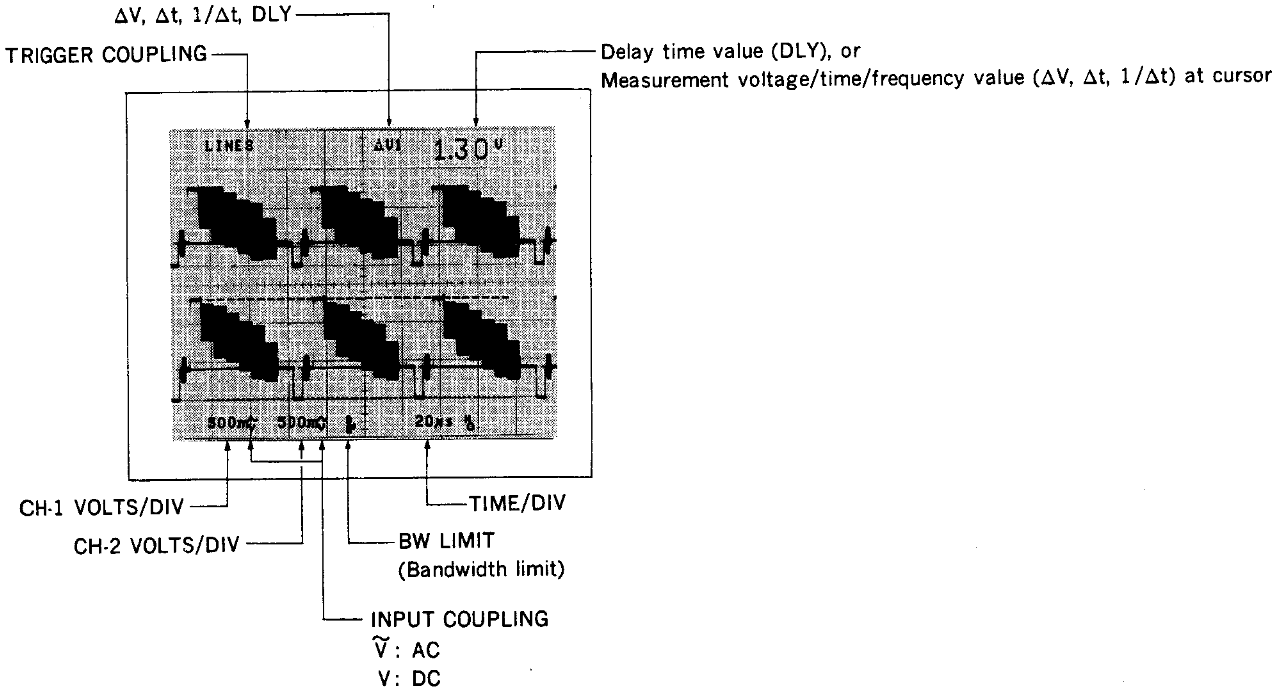
9-13. CH-2 Crosstalk Canceller Adjustment
9-14. LAU Overall Frequency Response Adjustment
9-15. CH-1 DUB Erase Current Adjustment
9-16. CH-2 DUB Erase Current Adjustment

7-3-3. Adjustment for Capstan Motor (SCV-0401A) Replacement
8-2. Capstan FG (B) Duty Rate Adjustment
8-3. Capstan FG (A) Duty Rate Adjustment
8-4. Stop Servo Adjustment

7-4. SETTING OF EQUIPMENT REQUIRED FOR ELECTRICAL ALIGNMENTS

Oscilloscope

- With waveform photograph used for waveform display:
  The setting conditions are displayed on the photograph as given below.


ΔV, Δt, 1/Δt, DLY
TRIGGER COUPLING
Delay time value (DLY), or
Measurement voltage/time/frequency value (ΔV, Δt, 1/Δt) at cursor
LINE8
ΔV1
1.30V
500mV
500mV
20μs
CH-1 VOLTS/DIV
CH-2 VOLTS/DIV
TIME/DIV
BW LIMIT
(Bandwidth limit)
INPUT COUPLING
Ṽ: AC
V: DC

7-5. PREPARING FOR ALIGNMENTS

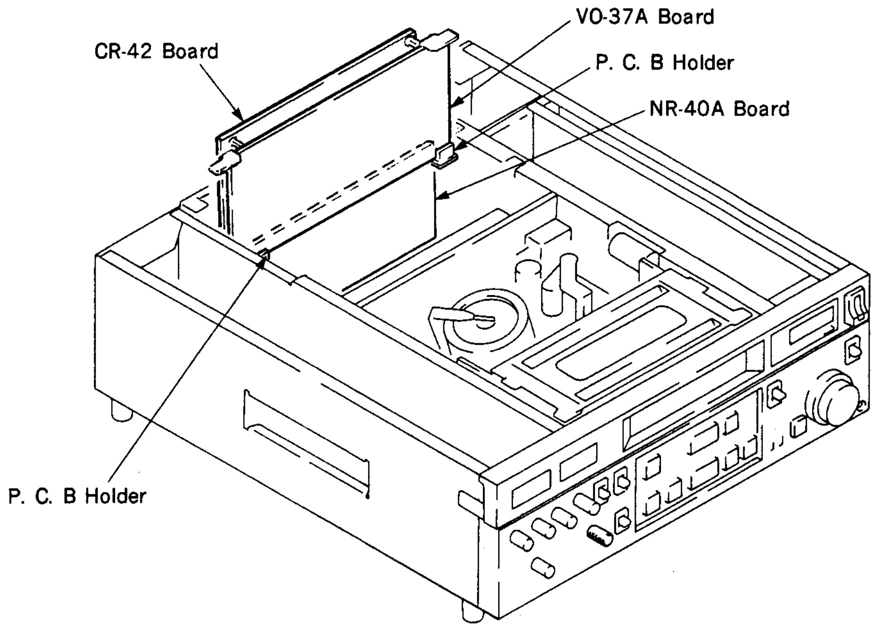
- Aligning the video system requires the following preparations to get access to the VO-37A board, CR-42 board and NR-40A board.

1) Remove the two screws securing the top panel. Remove the top panel.

2) Remove the two screws securing the VO-37A board and CR-42 board (NR-40A board) to the bracket.

3) Place the VO-37A board (NR-40A board) against the printed circuit board holder.

Repeat the above procedure for the NR-40A board.



- Aligning the audio system requires the following preparations to get access to the AU-179A board.

1) Remove the two screws securing the top panel. Remove the top panel.

2) Remove the two screws securing the AU-179A board. Remove the AU-179A board from the main unit.

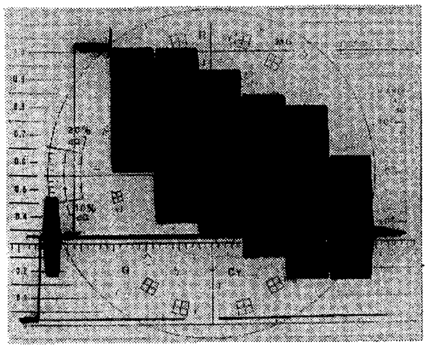
3) Place an insulation sheet between the AU-179A board and the main unit. Place the A side of AU-179A board upward. Be sure that the B side of the AU-179A board is insulated.

[Note]

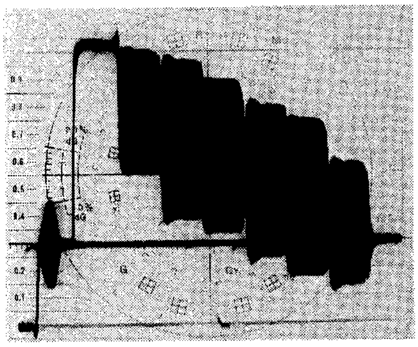
- Depending on the menu setting provided at the factory, this set is set to the following modes of operation (S-VHS selection). When recording with S-VHS tape, S-VHS (Super-VHS) mode is selected for recording.
  When recording with N-VHS tape, N-VHS (Normal-VHS) mode is selected for recording.
  When playing back, depending on the recording mode recorded on the tape, either S-VHS or N-VHS mode will be automatically selected. (Refer to Sec. 1 "Setting menu operation" and "Summary of menu".)
- The default values for the following circuits were set to OFF by menu operation before dispatch from the factory; the digital noise reduction circuit, digital chroma noise reduction circuit, digital luminance noise reduction circuit and digital luminance enhancer circuit. These circuits are only needed when the optional SVBK-150 is installed.
  Before aligning the video signal system with SVBK-150 installed, confirm that these default values are set OFF.
  Refer to "Summary of menu items and their function" and "Setting menu operation" in section 1.

7-6. TEST SIGNAL FOR VIDEO SYSTEM

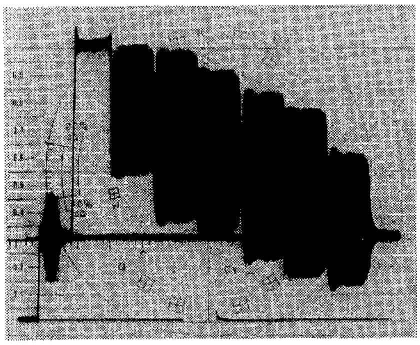
1. EBU COLOR BARS (100/0/75/0)



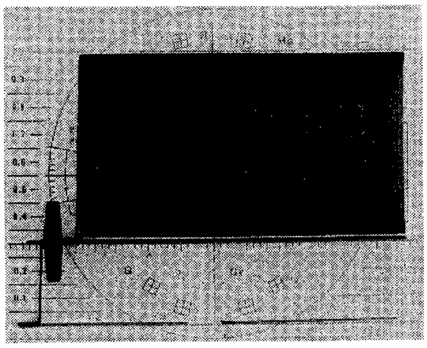
2. KRV-45HPS



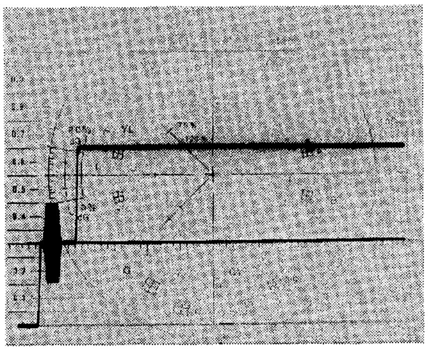
3. KRV-45PS



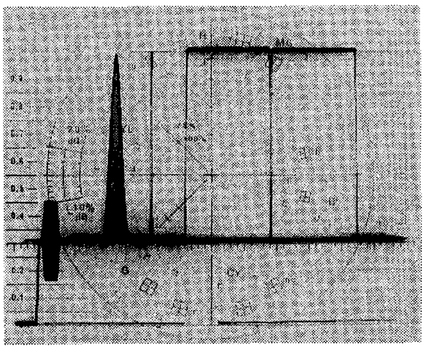
4. CHROMA NOISE



5. 50% FLAT FIELD



6. PULSE & BAR



SECTION 8
SYSTEM CONTROL AND SERVO SYSTEM ALIGNMENTS

[Equipment Required]

- Digital Voltmeter
- Oscilloscope
- S-VHS Blank Tape

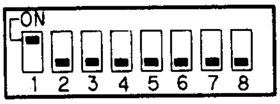
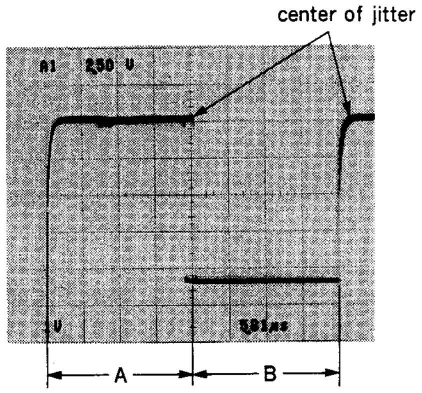
8-1. BACK-UP VOLTAGE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect TP101/SS-49C (K-2) to E3/SS-49C (H-4) with a 100 ohms resistor. • POWER : ON • Connect the digital voltmeter to test point (TP). • After the adjustment, remove the resistor.	TP101/SS-49C (K-2) $5.4^{+0}_{-0.1}$ V dc	⊘RV101/SS-49C (L-1)

* Preparing for BACK-UP VOLTAGE ADJUSTMENT

1) Remove the four screws of bottom panel and remove the bottom panel.

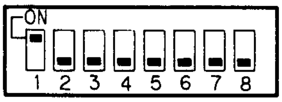
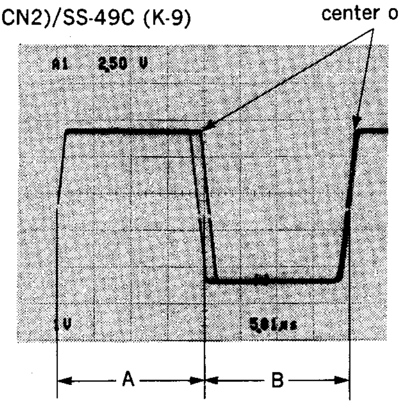
8-2. CAPSTAN FG (B) DUTY RATE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S101/SS-49C (H-9) No.1 : ON  S101 • Insert a S-VHS blank tape. • SEARCH ×10 mode (Press the SEARCH button and turn the shuttle dial to fully clockwise.) • Connect the oscilloscope to test point (TP). • After the adjustment, Set the S101 (No.1) to OFF.	TP103 (CN2)/SS-49C (K-9)  A=B (DUTY RATE 50%)	⊘RV503/SS-49C (J-9)

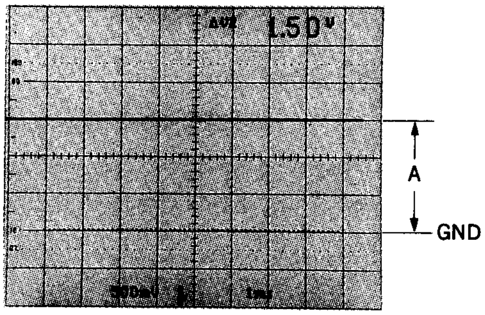
* Preparing for CAPSTAN FG DUTY RATE and STOP SERVO ADJUSTMENT

1) Remove the two screws of top panel and remove the top panel. (Refer to page 8-3)

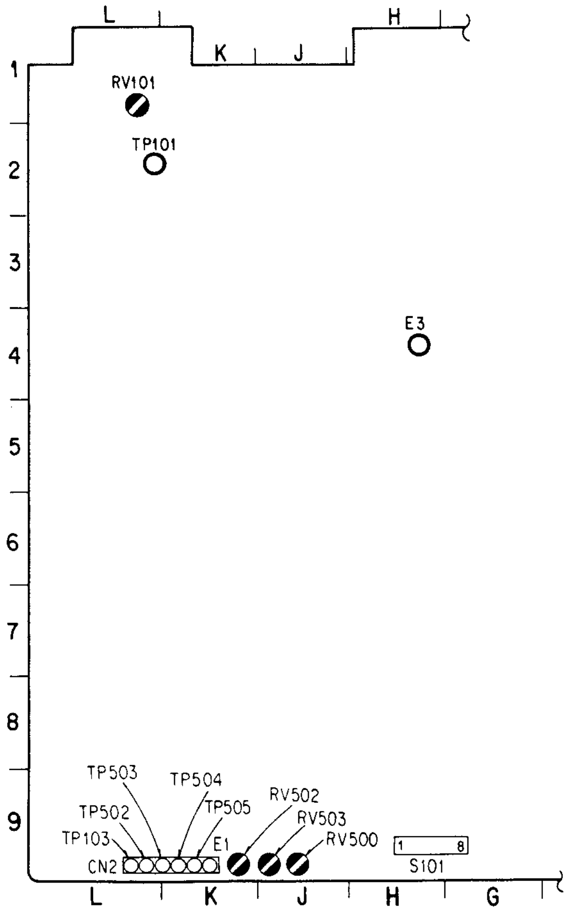
8-3. CAPSTAN FG (A) DUTY RATE ADJUSTMENT

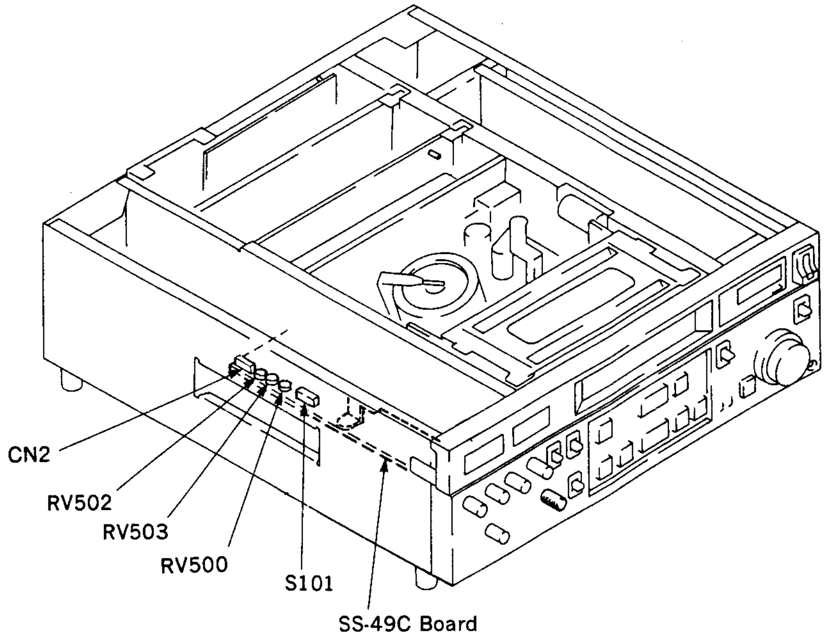
Machine condition for adjustment	Specifications	Adjustments
• S101/SS-49C (H-9) No.1 : ON  S101 • Insert a S-VHS blank tape. • SEARCH ×10 mode (Press the SEARCH button and turn the shuttle dial to fully clockwise.) • Connect the oscilloscope to test point (TP).	TP505 (CN2)/SS-49C (K-9)  A=B (DUTY RATE 50%)	❼RV500/SS-49C (J-9)

8-4. STOP SERVO ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S101/SS-49C (H-9) No.1 : ON • PAUSE mode • Connect between TP502 (CN2) /SS-49C (K-9) and TP503 (CN2) /SS-49C (K-9) with a shorting clip. • Connect the oscilloscope to test point (TP). • After the adjustment, set the S101 (No.1) to OFF.	TP504 (CN2)/SS-49C (K-9)  A=1.5±0.1 V dc • Remove the shorting clip and check that a waveform of TP103 (CN2)/SS-49C (K-9) is disappeared on the oscilloscope.	❼RV502/SS-49C (K-9)

Locations of CN, E, RVs, S and TPs on SS-49C board. (A side)


L
K
J
H
1
2
3
4
5
6
7
8
9
RV101
TP101
E3
TP503
TP504
TP502
TP505
RV502
RV503
TP103
E1
RV500
CN2
1
8
S101
L
K
J
H
G


CN2
RV502
RV503
RV500
S101
SS-49C Board

SECTION 9
AUDIO SYSTEM ALIGNMENTS

[Equipment Required]

- Oscilloscope
- Audio Signal Generator
- Audio Level Meter
- Frequency Counter
- RP Extension Tool (Refer to "RP extension tool" on page 6-3)
- S-VHS Blank Tape
- Alignment Tape

Alignment Tape Name (Part No.)	REC Mode	Contents		
		Video Area	**Audio Area**	**Control Area**
KRV-35NF 〈NTSC〉 (Part No.: 8-192-603-51)	SP	• Color bars	• Hi-Fi 400 Hz (stereo)	• CTL frequency 30 Hz
KRV-39PF 〈PAL〉 (Part No.: 8-192-603-96)	SP	• None	• RF	• None
KRV-45PS 〈PAL〉 (Part No.: pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 seconds, 400 Hz 15 seconds (alternately) • Hi-Fi audio 170 min 400 Hz (stereo)	• CTL frequency 25 Hz

[Setting of switch]

FRONT PANEL

- CTL/MENU switch ....CTL

SUB PANEL

- AUDIO INPUT SELECT switch ....NORMAL-COM
- DOLBY NR switch ....OFF
- LIMITER switch ....OFF
- Hi-Fi REC switch ....ON
- SYSTEM SELECT switch ....PAL

KEY PANEL

- PROGRAM switch ....OFF
- TIMER switch ....OFF
- CH-2 METER switch (TRACKING) ....AUDIO
- TRACKING Control VR ....FIXED

MENU SETTING

- S-VHS recording selection.........................SvH-$\boxed{\text{At}}$
  (Refer to Section 1 "Setting menu operation" and "Summary of menu".)

[Note]

- 0 dBu=0.775 Vrms
- After the REC reference level setting is completed, the set position of the AUDIO LEVEL control should not be moved until audio system alignment is completed.

[Audio REC Reference Level Setting]

a) Hi-Fi REC REFERENCE LEVEL SETTING

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : 400 Hz, −6 dBu • AUDIO LINE OUT SELECT switch/SUB PANEL: Hi-Fi • METER SELECT switch (MONITOR OUT)/KEY PANEL : Hi-Fi • CH-2 METER switch/KEY PANEL : AUDIO • STOP (E-E) mode • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi).	CH-1: AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2: AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) −6.0±0.3 dBu	CH-1: CH-1 AUDIO LEVEL Hi-Fi knob/KEY PANEL CH-2: CH-2 AUDIO LEVEL Hi-Fi knob/KEY PANEL

b) NORMAL REC REFERENCE LEVEL SETTING

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : 400 Hz, −6 dBu • AUDIO LINE OUT SELECT switch SUB PANEL: NORM • METER SELECT switch (MONITOR OUT)/KEY PANEL : NORM • CH-2 METER switch/KEY PANEL : AUDIO • STOP (E-E) mode • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi).	CH-1: AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2: AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) −6.0±0.3 dBu	CH-1: CH-1 AUDIO LEVEL NORM knob/KEY PANEL CH-2: CH-2 AUDIO LEVEL NORM knob/KEY PANEL

9-1. AUDIO LEVEL METER ADJUSTMENT

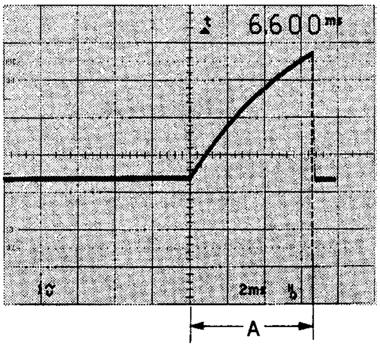
Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : 400 Hz, −6 dBu • AUDIO LINE OUT SELECT switch: Hi-Fi • METER switch: Hi-Fi • STOP (E-E) mode	CH-1 and CH-2 Audio Level Meter/KEY PANEL The pointer reading should be "0 dB".	⊘CH-1: RV1/MT-73 ⊘CH-2: RV2/MT-73

9-2. AFM CARRIER ADJUSTMENT

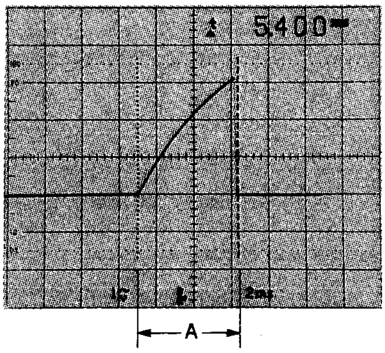
Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • REC mode • Connect the frequency counter to test point (TP).	TP7/AU-179A (C-3) 1.400±0.005 MHz	⊘RV3/AU-179A (B-2)
	TP11/AU-179A (B-3) 1.800±0.005 MHz	⊘RV7/AU-179A (B-3)

9-3. AFM SWITCHING POSITION ADJUSTMENT

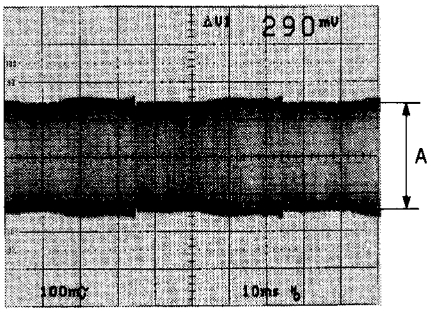
Step 1 〈PAL〉

Machine condition for adjustment	Specifications	Adjustments
• SYSTEM SELECT switch: PAL • Connect the oscilloscope to test point (TP). • Play back the alignment tape KRV-45PS.	TP3/AU-179A (A-3)  A=6.6±0.2 ms	⊘RV10/AU-179A (A-3)

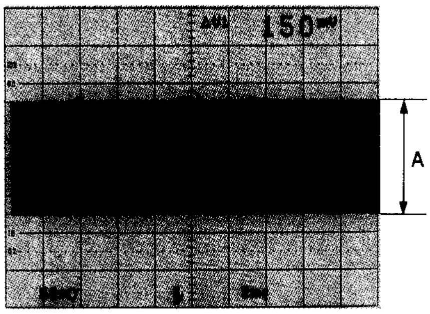
Step 2 〈4.43 NTSC〉

Machine condition for adjustment	Specifications	Adjustments
• SYSTEM SELECT switch : 4.43 NTSC • Connect the oscilloscope to test point (TP). • Play back the alignment tape KRV-35NF. • After the adjustment, set the SYSTEM SELECT switch to PAL.	TP3/AU-179 (A-3)  A=5.4±0.2 ms	⊘RV1/AU-179 (A-3)

9-4. AFM PB RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Tracking VR: center click (FIXED) • Connect the oscilloscope to test point (TP). • Play back the alignment tape KRV-39PF.	TP5/AU-179A (A-2)  A=300±10 mV p-p	⊘RV2/AU-179A (A-2) Trigger: TP3/AU-179A (A-3)

9-5. AFM REC RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • REC mode • Connect the oscilloscope to CN804 (pin 1) on RP-62A board.	CN804-1/RP-62A (C-1) (RP extension tool: AFM REC CURR terminal)  A=150±10 mV p-p (When using the RP extension tool, connect the oscilloscope to AFM REC CURR. terminal.)	⊘RV6/AU-179A (C-4)

9-6. AFM PB LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE OUT SELECT switch : Hi-Fi • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi). • Play back the alignment tape KRV-45PS.	CH-1: AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2: AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) −6.0±0.3 dBu	⊘CH-1: RV4/AU-179A (B-2) ⊘CH-2: RV8/AU-179A (B-3)

9-7. AFM DEVIATION ADJUSTMENT

Step 1.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : 400 Hz, −6 dBu • AUDIO LINE OUT SELECT switch : Hi-Fi • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi). • Perform the self-recording/play back (measurement) with a S-VHS blank tape.	CH-1 : AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2 : AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) −6.0±0.5 dBu 〈Note〉 • When the specification is not satisfied, perform the adjustment described in Step 2. • Calculate the difference between the specification (−6.0 dBu) and the measured value in measurement for CH-1 and CH-2. Correction value=Specification value−Measured value	

Step 2.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : 400 Hz, −6 dBu • AUDIO LINE OUT SELECT switch : Hi-Fi • STOP (E-E) mode • Connect the audio level meter to test point (TP).	CH-1 : TP8/AU-179A (D-1) CH-2 : TP12/AU-179A (C-3) • Check the measured value at test point. Specification value=Measured value−1/2×correction value • Make the output value coincide with specification value (Step 2). • Perform the adjustment described in Step 1 again. Example) Step 1 Specification −6.0 dBu Measured value −7.0 dBu Correction value =−6.0 dBu− (−7.0 dBu) =1.0 dBu Step 2 Measured value −19 dBu Specification value=−19 dBu−1/2×1.0 dBu =−19.5 dBu	⊘ CH-1 : RV5/AU-179A (D-1) ⊘ CH-2 : RV9/AU-179A (D-2)

9-8. LAU PB LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE OUT SELECT switch : NORMAL • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi). • Play back the Normal Audio 400 Hz portion of the alignment tape KRV-45PS.	CH-1 : AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2 : AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) −6.0±0.3 dBu	⊘CH-1 : RV202/AU-179A (I-4) ⊘CH-2 : RV302/AU-179A (F-3)

9-9. LAU PB FREQUENCY RESPONSE ADJUSTMENT

<table>
<tr><th>Machine condition for adjustment</th><th>Specifications</th><th>Adjustments</th></tr>
<tr><td>• AUDIO LINE OUT SELECT switch : NORMAL
• Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi).
• Play back the Normal Audio 400 Hz and 7 kHz portion of the alignment tape KRV-45PS.</td><td>CH-1 : AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ)
CH-2 : AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ)
<table>
<tr><th>Frequency</th><th>Level</th></tr>
<tr><td>400 Hz</td><td>Reference</td></tr>
<tr><td>7 kHz</td><td>Reference±0.5 dB</td></tr>
</table></td><td>⊘CH-1 : RV201/AU-179A (I-4)
⊘CH-2 : RV301/AU-179A (G-3)</td></tr>
</table>

9-10. BIAS OSCILLATOR FREQUENCY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • REC mode • Connect the frequency counter to test point (TP).	TP401/AU-179A (K-4) 71±2 kHz	⊘T401/AU-179A (L-2)

9-11. LAU REC LEVEL ADJUSTMENT

Step 1.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : 1 kHz, −6 dBu • AUDIO LINE OUT SELECT switch : NORMAL • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi). • Perform the self-recording/play back (measurement) with a S-VHS blank tape.	CH-1 : AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2 : AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) −6.0±0.3 dBu 〈Note〉 • When the specification is not satisfied, perform the adjustment described in Step 2. • Calculate the difference between the specification (−6.0 dBu) and the measured value in measurement for CH-1 and CH-2. Correction value=Specification value−Measured value	

Step 2.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : 1 kHz, −6 dBu • AUDIO LINE OUT SELECT switch : HiFi • STOP (E-E) mode • Connect the audio level meter to test point (TP).	CH-1 : TP206/AU-179A (I-3) CH-2 : TP306/AU-179A (G-2) • Check the measured value at test point. Specification value=Measured value−Correction value • Set the above specification value to output level and perform the adjustment described in Step 1 again. Example) Step 1 Specification −6.0 dBu Measured value −7.0 dBu Correction value =−6.0 dBu− (−7.0 dBu) =1.0 dBu Step 2 Measured value=−19 dBu Specification value =−19 dBu−1.0 dBu =−20 dBu	⊘CH-1 : RV204/AU-179A (I-3) ⊘CH-2 : RV304/AU-179A (F-3)

* DUB (AUDIO REC) mode

1. When the set leaves the factory, the DUB (AUDIO Insert REC) mode is set to AUDIO INSERT CH-1.
2. Setting the DUB (AUDIO Insert REC) mode to AUDIO INSERT CH-2.
   1) Set the CTL/MENU switch (front panel) to MENU.
   2) Press the ITEM button to select the DUB (AUDIO Insert REC) mode.

      dub - C 1

   3) Press the DATA button (key panel) to set the AUDIO INSERT CH-2.

      dub - C 2

   4) After setting is completed, set the CTL/MENU switch to CTL.

Refer to Sec.1 "Setting menu operation" and "Summary of menu items and their functions" for menu setting of the DUB (AUDIO Insert REC) mode and etc.

9-12. CH-1 CROSSTALK CANCELLER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CH-1, AUDIO IN (NORM) : 4 kHz, −6 dBu • AUDIO LINE OUT SELECT switch : NORMAL • DUB (Audio Insert REC) mode AUDIO INSERT CH-1 • Insert a S-VHS blank tape.	AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) Minimize the level.	⊘RV206/AU-179A (G-3)

9-13. CH-2 CROSSTALK CANCELLER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CH-2, AUDIO IN (NORM) : 4 kHz, −6 dBu • AUDIO LINE OUT SELECT switch: NORMAL • DUB (Audio Insert REC) mode AUDIO INSERT CH-2 • Insert a S-VHS blank tape. • After the adjustment, set the DUB mode to AUDIO INSERT CH-1.	AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) Minimize the level.	⊘RV306/AU-179A (J-4)

9-14. LAU OVERALL FREQUENCY RESPONSE ADJUSTMENT

Step 1.

<table>
<tr><th>Machine condition for adjustment</th><th>Specifications</th><th>Adjustments</th></tr>
<tr><td>• CH-1, 2 AUDIO IN (NORM)
: 1 kHz, 7 kHz, −30 dBu
• AUDIO LINE OUT SELECT switch
: NORMAL
• Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi).
• Perform the self-recording/play back (measurement) with a S-VHS blank tape.</td><td>CH-1 : AUDIO OUT (NORM/Hi-Fi) CH-1/L
(terminated with 47 kΩ)
CH-2 : AUDIO OUT (NORM/Hi-Fi) CH-2/R
(terminated with 47 kΩ)
<table><tr><th>Frequency</th><th>Level</th></tr><tr><td>1 kHz</td><td>Reference</td></tr><tr><td>7 kHz</td><td>Reference±2 dB</td></tr></table>〈Note〉 If the specification is not satisfied, perform the adjustment of the Step 2.</td><td></td></tr>
</table>

Step 2.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : 1 kHz, −6 dBu • Connect the audio level meter to test point (TP). • Insert a S-VHS blank tape. • REC mode	CH-1 : TP201/AU-179A (J-4) GND : TP202/AU-179A (J-4) CH-2 : TP301/AU-179A (H-3) GND : TP302/AU-179A (G-3) • With measured value (7 kHz) is higher than reference value (1 kHz): Increase the level of TP201 (CH-1) or TP301 (CH-2). • With measured value (7 kHz) is lower than reference value (1 kHz): Decrease the level of TP201 (CH-1) or TP301 (CH-2). Repeat Step 1 and Step 2 until the specification of Step 1 is satisfied.	⊘ CH-1 : RV205/AU-179A (K-3) ⊘ CH-2 : RV305/AU-179A (H-4)

9-15. CH-1 DUB ERASE CURRENT ADJUSTMENT

Step 1.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • REC mode • Connect the audio level meter to test point (TP).	TP201/AU-179A (J-4) GND: TP202/AU-179A (J-4) Measured the level value at TP201.	

Step 2.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • DUB (Audio Insert REC) mode AUDIO INSERT CH-1 • Connect the audio level meter to test point (TP).	TP201/AU-179A (J-4) GND: TP202/AU-179A (J-4) Measured the level value at TP201. Level value (REC mode)=Level value (DUB mode)	⊘LV401/AU-179A (K-4)

Step 3. S/N 10001-10030

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • DUB (Audio Insert REC) mode • AUDIO INSERT CH-1 • Connect the audio level meter to test point (TP).	TP304/AU-179A (J-4) Minimize the level.	⊘LV301/AU-179A (G-3)

9-16. CH-2 DUB ERASE CURRENT ADJUSTMENT

Step 1.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • REC mode • Connect the audio level meter to test point (TP).	TP301/AU-179A (H-3) GND: TP302/AU-179A (G-3) Measured the level value at TP301.	

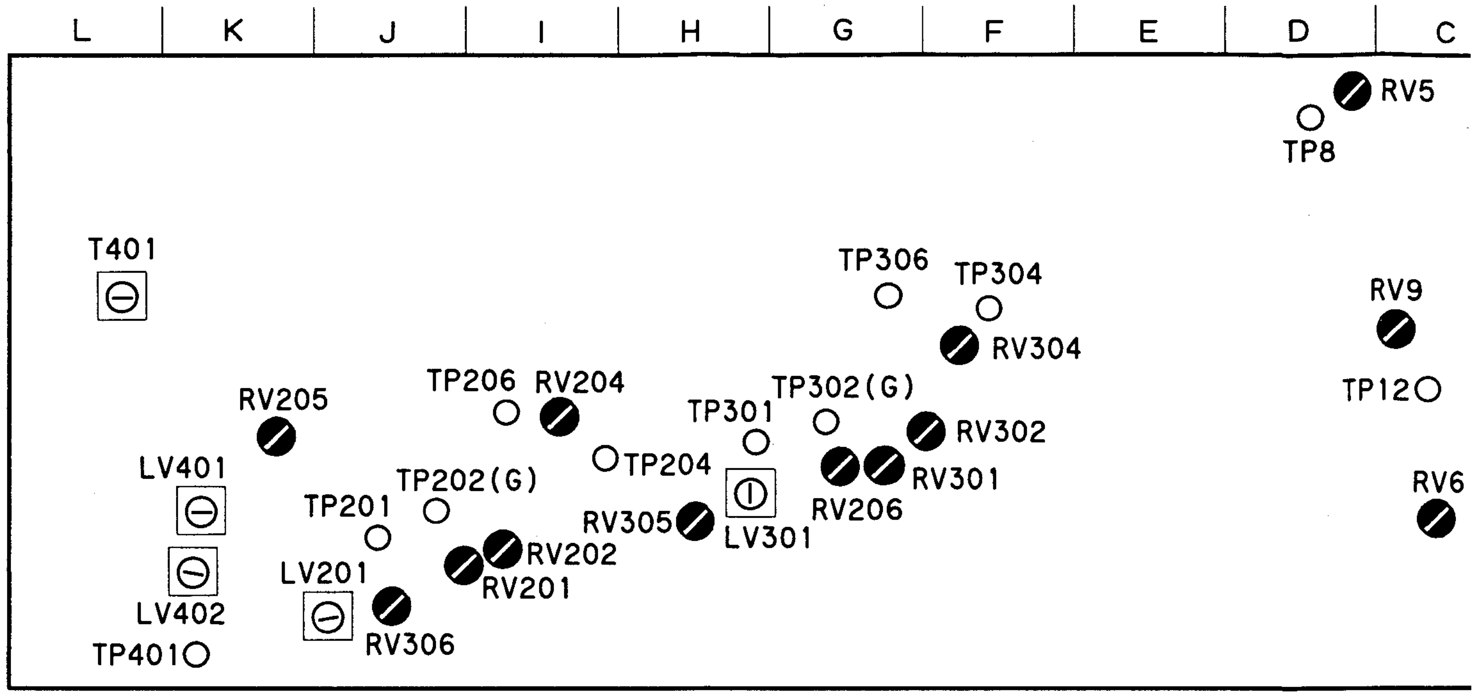
Step 2.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • DUB (Audio Insert REC) mode • AUDIO INSERT CH-2 • Connect the audio level meter to test point (TP).	TP301/AU-179A (H-3) GND: TP302/AU-179A (G-3) Measured the level value at TP301. Level value (REC mode)=Level value (DUB mode)	⊘LV402/AU-179A (K-4)

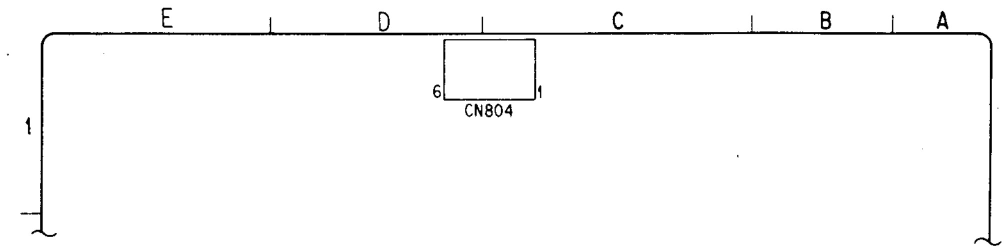
Step 3. S/N 10001-10030

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN (NORM) : no signal • Insert a S-VHS blank tape. • DUB (Audio Insert REC) mode • AUDIO INSERT CH-2 • Connect the audio level meter to test point (TP).	TP204/AU-179A (I-3) Minimize the level.	⊘LV201/AU-179A (J-4)

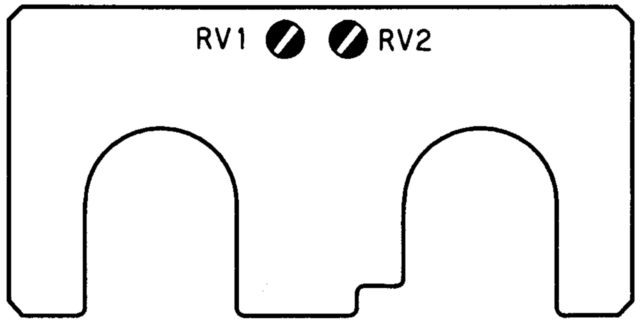
Locations of LVs, RVs, T and TPs on AU-179A board. (A side)

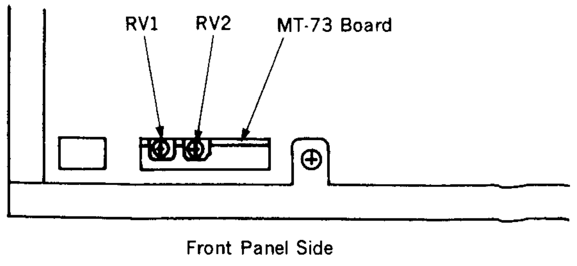

L
K
J
I
H
G
F
E
D
C
RV5
TP8
T401
TP306
TP304
RV9
RV304
RV205
TP206
RV204
TP301
TP302(G)
TP12
RV302
LV401
TP202(G)
TP204
RV301
RV6
TP201
RV305
RV206
LV301
RV202
LV201
RV201
LV402
RV306
TP401

Locations of CN on RP-62A board. (A side)

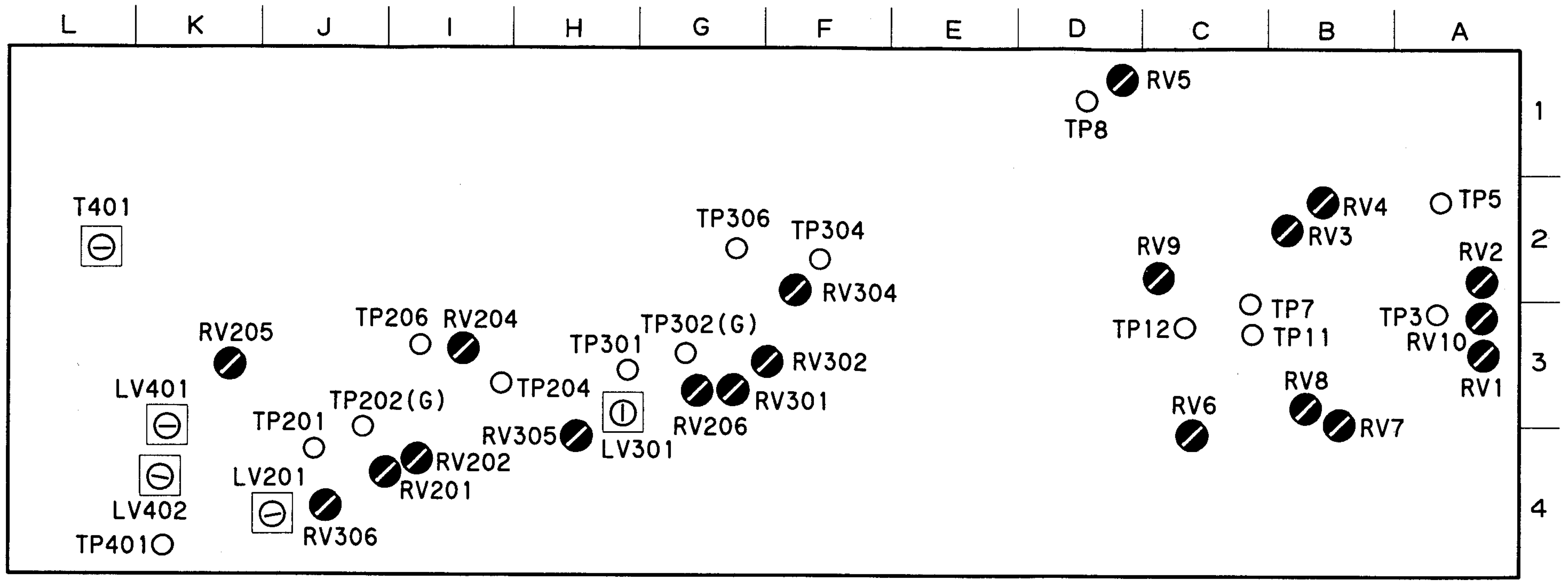

E
D
C
B
A
1
6
1
CN804

Locations of RVs on MT-73 board. (A side)

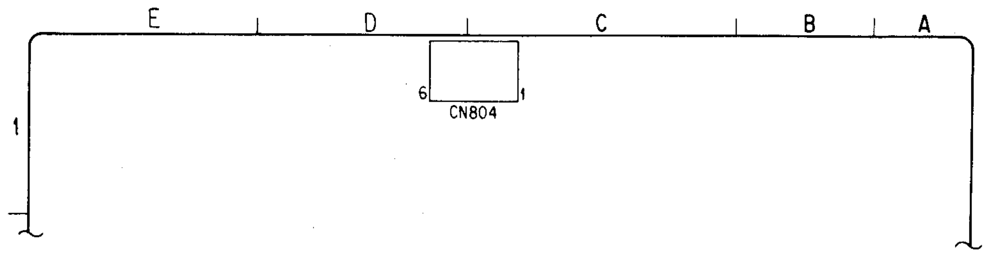



RV1
RV2
MT-73 Board
Front Panel Side

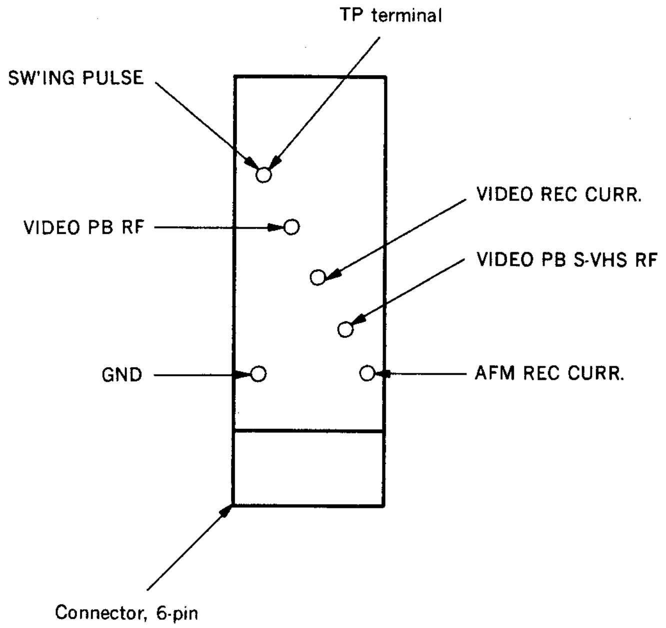
Locations of LVs, RVs, T and TPs on AU-179A board. (A side)


L
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
RV5
TP8
T401
TP306
TP304
RV304
RV9
RV4
RV3
TP5
RV2
TP7
TP11
TP3
RV10
RV1
TP12
RV205
TP206
RV204
TP301
TP302(G)
RV302
LV401
TP202(G)
TP201
TP204
RV301
RV206
RV305
LV301
RV202
RV201
LV201
RV306
LV402
TP401
RV8
RV6
RV7

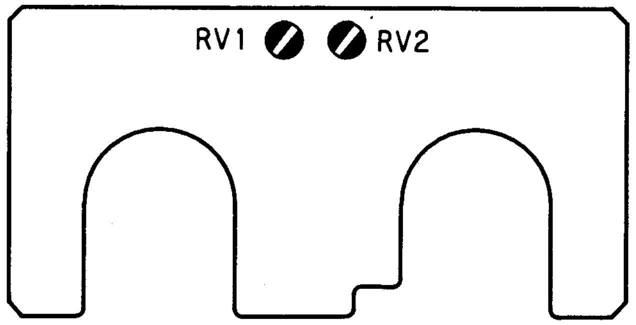
Locations of CN on RP-62A board. (A side)

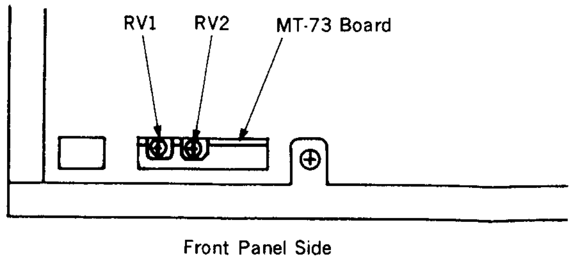

E
D
C
B
A
1
6
1
CN804

Location of TP terminals on RP extension tool


TP terminal
SW'ING PULSE
VIDEO PB RF
VIDEO REC CURR.
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6-pin

Locations of RVs on MT-73 board. (A side)




RV1
RV2
MT-73 Board
Front Panel Side

SECTION 10
VIDEO SYSTEM ALIGNMENTS

[Equipment Required]

- Oscilloscope
- Frequency Counter
- Multiformat Signal Generator (with S-VIDEO OUT)
- Waveform Monitor/Vector Scope
- Color Monitor (with H-V Delay)
- Y/C Delay Adjustment tool
- Video Cable with S Connector
- RP Extension Tool (Refer to "RP extension tool" on page 6-3.)
- Blank Tape (Normal-VHS)
- Blank Tape (Super-VHS)
- Alignment Tape

Alignment Tape Name (Part No.)	REC Mode	Contents		
		Video Area	Audio Area	Control Area
〈NTSC〉 KRV-51HN (Super-VHS) (Part No.: 8-192-605-21)	SP	• Color bars 5 min.	No signal	• CTL frequency 30 Hz
	EP	• Color bars 5 min.	No signal	
〈PAL〉 KRV-45PS (Normal-VHS) (Part No.: pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 seconds, 400 Hz 15 seconds (alternately) • HiFi audio 170 min 400 Hz (stereo)	• CTL frequency 25 Hz
〈PAL〉 KRV-45HPS (Super-VHS) (Part No.: pending)				

[Setting of switch]

REAR PANEL
- TERMINATED with 75 Ω switch (VIDEO IN)……75 Ω ON

FRONT PANEL
- CTL/MENU switch……………………………………CTL

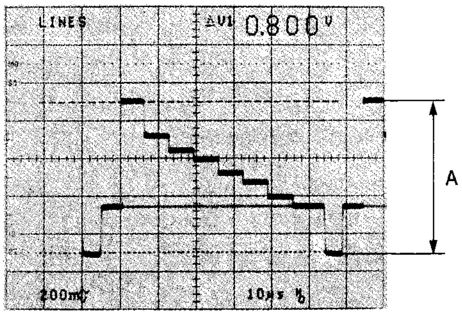
SUB PANEL
- VIDEO INPUT SELECT switch ……………………S-VIDEO
- EDIT switch…………………………………………OFF
- SYSTEM SELECT switch …………………………PAL

KEY PANEL
- PROGRAM switch …………………………………OFF
- TIMER switch ……………………………………OFF
- TRACKING Control VR ……………………………FIXED

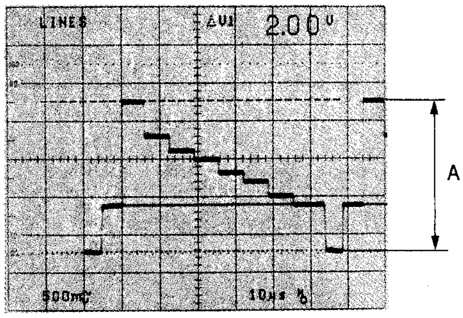
MENU SETTING
- S-VHS recording selection ....SvH-$\boxed{\text{At}}$

(Refer to Section 1 "Setting menu operation" and "Summary of menu".)

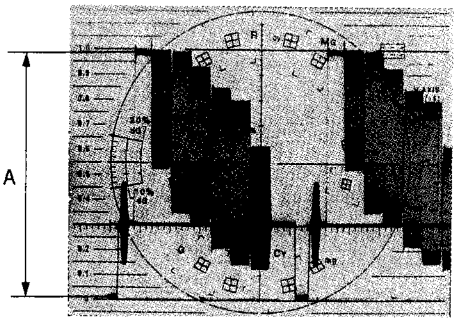
10-1. Y AGC LEVEL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• S-VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP303/VO-37A (D-4)  A=0.80±0.05 V p-p	⊘RV101/VO-37A (K-4) Trigger : TP301/VO-37A (C-5)

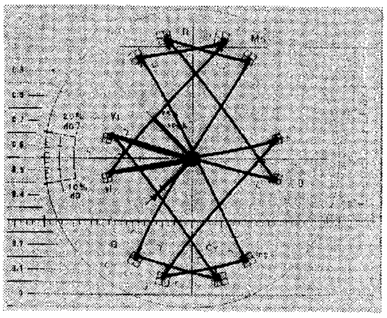
10-2. S VIDEO OUT Y LEVEL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• S-VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP492/VO-37A (G-1)  A=2.0±0.1 V p-p	⊘RV482/VO-37A (G-2) Trigger : TP301/VO-37A (C-5)

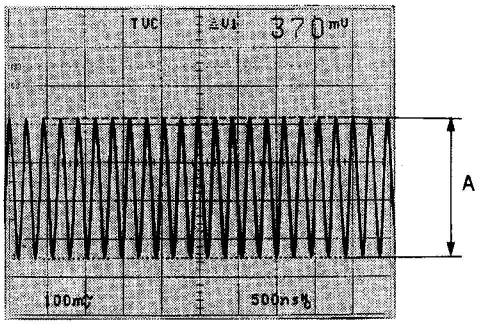
10-3. VIDEO OUT MIX Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode Waveform Monitor/Vector Scope • WAVEFORM	VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p	⊘RV480/VO-37A (G-4)

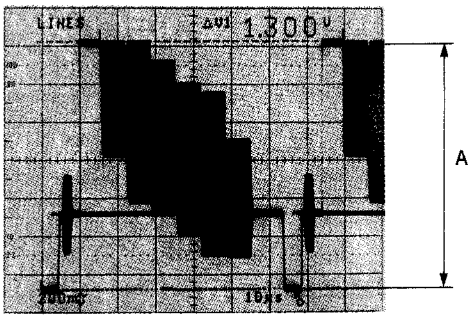
10-4. VIDEO OUT MIX CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode Waveform Monitor/Vector Scope • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  • The luminous spot of burst shall be at 75% position on mark. • One and more luminous spots shall within the frame of each ⊞ mark.	⊘RV481/VO-37A (G-3)

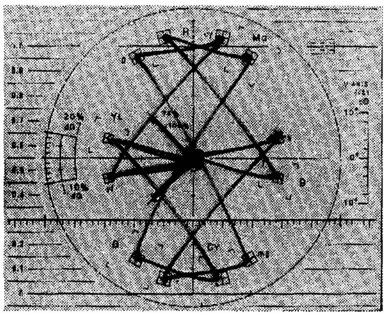
10-5. PB fsc ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the frequency counter through the oscilloscope to test point (TP).	TP602/CR-42 (H-1)  4.433619±0.000020 MHz (A≧300 mV p-p)	⊘ CV601/CR-42 (F-1) Trigger : INT

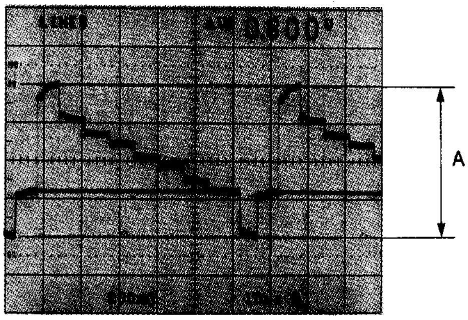
10-6. COMPOSITE IN Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO INPUT SELECT switch : LINE • VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP302/VO-37A (A-5)  A=1.30±0.05 V p-p	⊘ RV310/VO-37A (B-1) Trigger : TP301/VO-37A (C-5)

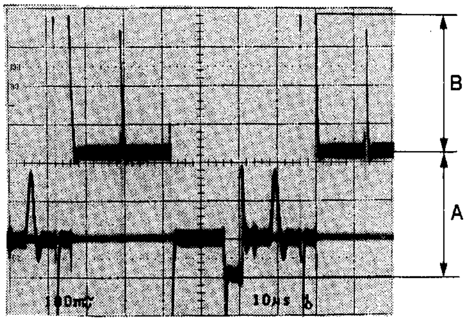
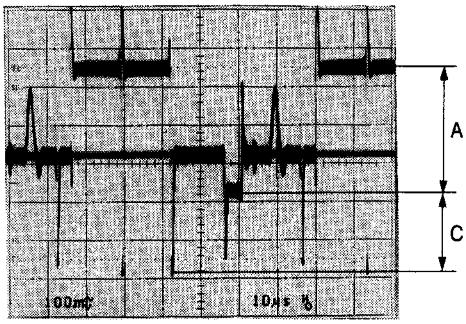
10-7. COMPOSITE IN CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO INPUT SELECT switch : LINE • VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • After the adjustment, set the VIDEO INPUT SELECT switch to S-VIDEO. Waveform Monitor/Vector Scope • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  • The luminous spot of burst shall be at 75% position on mark. • One and more luminous spots shall within the frame of each ⊞ mark.	⊘RV311/VO-37A (B-1)

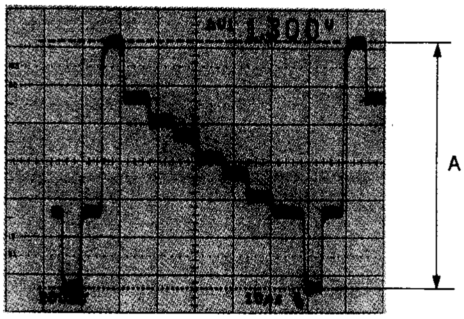
10-8. S-VHS Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP201/VO-37A (E-5)  A=0.80±0.04 V p-p	⊘RV202/VO-37A (E-5) Trigger : TP301/VO-37A (C-5)

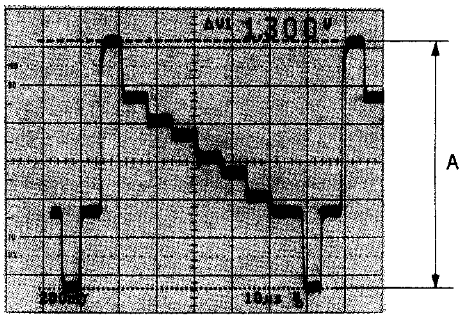
10-9. S-VHS WHITE/DARK CLIP ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN: 2T PULSE & BAR signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP101/VO-37A (K-3)  $\frac{B}{A}=110\pm2\%$ (A=VIDEO signal+SYNC signal. A is reference level.)	⊘ RV104/VO-37A (K-2) Trigger : TP301/VO-37A (C-5)
	TP101/VO-37A (K-3)  $\frac{C}{A}=70\pm2\%$ (A=VIDEO signal+SYNC signal. A is reference level.)	⊘ RV108/VO-37A (K-2) Trigger : TP301/VO-37A (C-5)

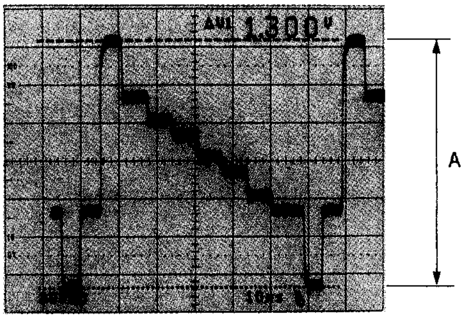
10-10. N-VHS PB DEMOD Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the oscilloscope to test points (TPs).	TP302/VO-37A (A-5)  A=1.30±0.05 V p-p	⓿ RV106/VO-37A (J-2) Trigger : TP301/VO-37A (C-5)

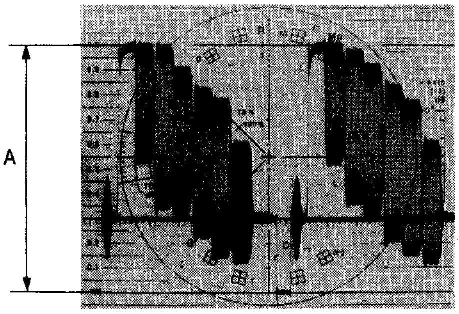
10-11. S-VHS PB DEMOD Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP302/VO-37A (A-5)  A=1.30±0.05 V p-p	⓿ RV105/VO-37A (H-1) Trigger : TP301/VO-37A (C-5)

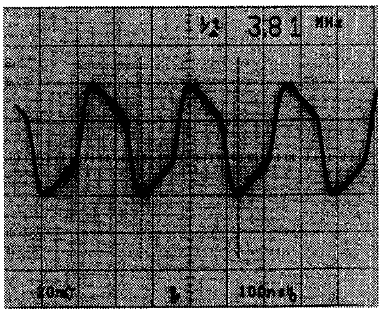
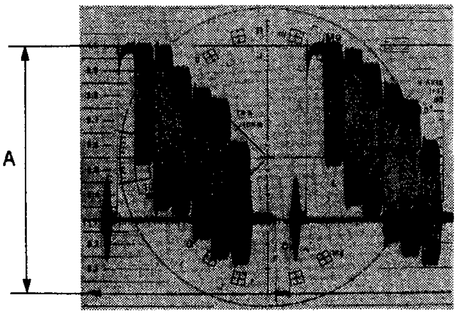
10-12. NR IN Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP304/VO-37A (D-2)  A=1.30±0.05 V p-p	⊘RV30/VO-37A (D-2) Trigger : TP301/VO-37A (C-5)

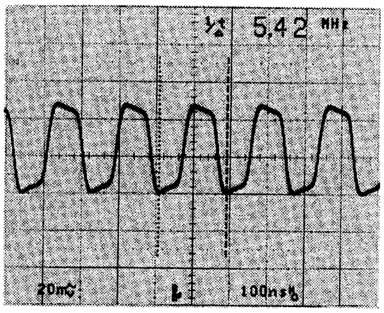
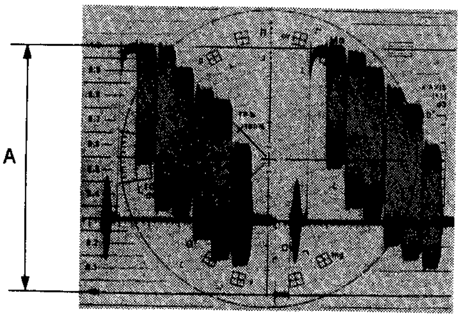
10-13. NR OUT Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform Monitor/Vector Scope • WAVEFORM	VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p	⊘RV402/VO-37A (E-3)

10-14. N-VHS SYNC CHIP CARRIER SET/DEVIATION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN: No signal • VIDEO IN : No signal • Insert a N-VHS blank tape. • STOP (E-E) mode • Connect the frequency counter through the oscilloscope to test point (TP).	Sync chip carrier set adjustment TP202/VO-37A (L-1)  3.80±0.05 MHz	⊘RV109/VO-37A (K-2)
• VIDEO INPUT SELECT switch : LINE • VIDEO IN: COLOR BARS signal (WHITE 100%, AMPL 75%) • Perform the self-recording/play back (measurement) with a N-VHS blank tape. • After the adjustment, set the VIDEO INPUT SELECT switch to S-VIDEO. Waveform Monitor/Vector Scope • WAVEFORM	Deviation adjunstment VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p • With measured value is higher than specification value: Turu only a few RV102 to counterclockwise. • With measured value is lower than specification value: Turu only a few RV102 to clockwise. Repeat the self-recording/play back (measurement) and RV102 adjustment until the specification is satisfied.	⊘RV102/VO-37A (K-3)

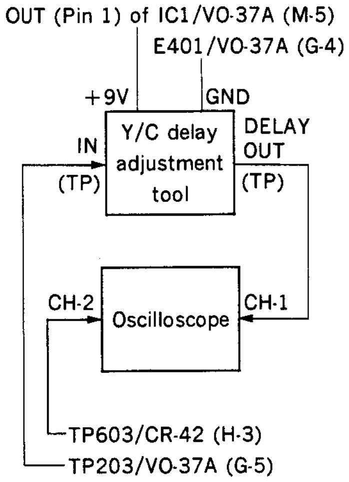
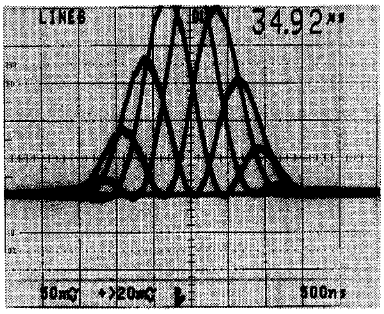
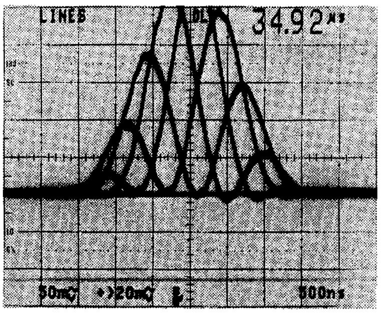
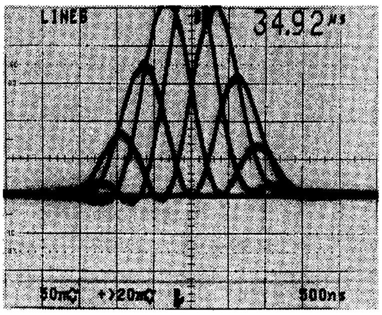
10-15. S-VHS SYNC CHIP CARRIER SET/DEVIATION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : No signal • VIDEO IN: No signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the frequency counter through the oscilloscope to test point (TP).	Sync chip carrier set adjustment TP202/VO-37A (L-1)  5.42±0.05 MHz	⊘RV107/VO-37A (K-1)
• S-VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Perform the self-recording/play back (measurement) with a S-VHS blank tape. Waveform Monitor/Vector Scope • WAVEFORM	Deviation adjustment VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p • With measured value is higher than specification value: Turu only a few RV103 to counterclockwise. • With measured value is lower than specification value: Turu only a few RV103 to clockwise. Repeat the self-recording/play back (measurement) and RV103 adjustment until the specification is satisfied.	⊘RV103/VO-37A (K-3)

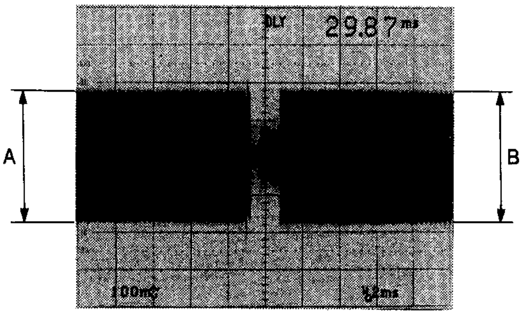
10-16. 320 FH FREE RUN ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN: No signal • VIDEO IN: No signal • Turn the power switch OFF and then turn ON again. • Connect the frequency counter through the oscilloscope to test point (TP). • Insert a S-VHS blank tape. • STOP (E-E) mode	TP608/CR-42 (F-2) 5.060±0.003 MHz	⊘RV602/CR-42 (G-2)

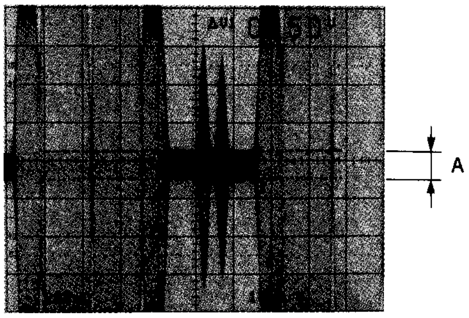
10-17. REC Y/C DELAY ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• VIDEO INPUT SELECT switch : LINE • VIDEO IN : PULSE & BAR signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs) as follows.  OUT (Pin 1) of IC1/VO-37A (M-5) E401/VO-37A (G-4) +9V GND Y/C delay adjustment tool IN (TP) DELAY OUT (TP) CH-2 Oscilloscope CH-1 TP603/CR-42 (H-3) TP203/VO-37A (G-5) • After the adjustment, set the VIDEO INPUT SELECT switch to S-VIDEO. Oscilloscope • ADD • CH-2 : VAR	CH-1 : TP203/VO-37A (G-5) (through the Y/C delay adjustment tool) CH-2 : TP603/CR-42 (H-2) OK  NG  NG  Flatten the bottom side portion (envelope) of modulation pulse part. [If the specification can not be satisfied, short the short land slit SL1/CR-42 (H-2), SL2/CR-42 (H-2), or SL3/CR-42 (H-2), and readjust using CV603/CR-42 (G-2) so that specication is satisfied. (SL No. value becomes large, chroma signal delays behind for the Y signal.)]	⓿ CV603/CR-42 (G-2)

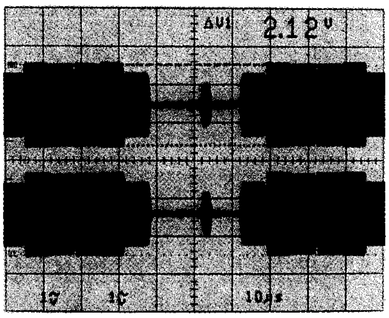
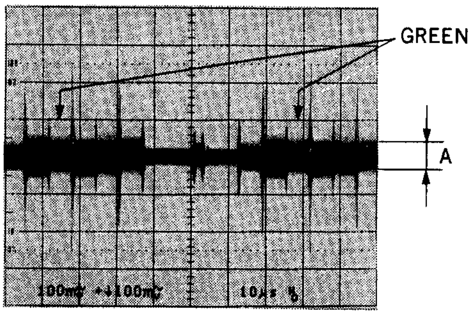
10-18. PB CHROMA RF LEVEL BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Tracking Control VR : Maximize the A and B level. • Connect the oscilloscope to test point (TP) and connector pin. • After the adjustment, set the tracking VR to center click (FIXED).	TP601/CR-42 (G-3)  $\frac{B}{A}=100\pm5\%$ (A is reference level.)	⊘ RV606/CR-42 (E-3) Trigger : CN804-5/RP-62A (C-1) (RP extension tool : SW'ING PULSE terminal)

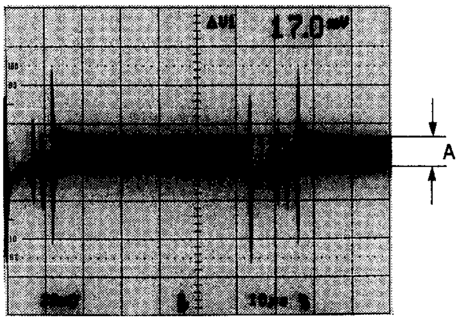
10-19. CONVERTER BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP501/CR-42 (C-3)  Minimize the A level. (A≦0.2 V)	⊘ RV603/CR-42 (E-3) Trigger : TP302/VO-37A (A-5)

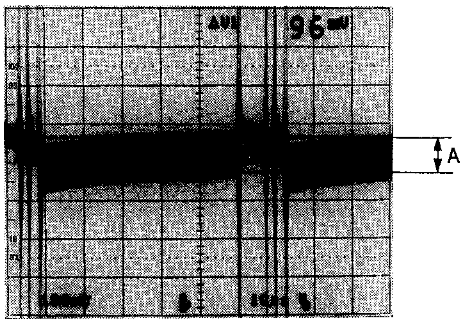
10-20. CROSSTALK CANCELLER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode. • Connect the oscilloscope to test points (TPs). Oscilloscope • ADD • CH-2 : INV	CH-1 : TP501/CR-42 (C-3) CH-2 : TP502/CR-42 (A-4)   Minimize the A level. (A is geen level)	⊘ RV501/CR-42 (C-4) ⊘ RV502/CR-42 (B-4) • Adjust alternately. Trigger : TP301/VO-37A (C-5)

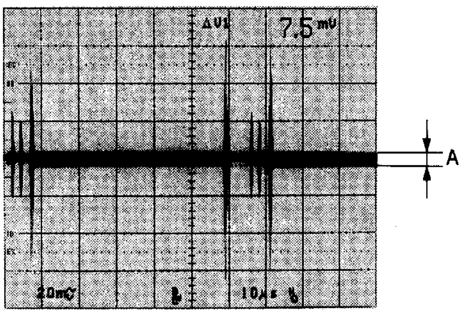
10-21. CPI ADJUSTMENT (1)

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : CHROMA NOISE signal • Insert a S-VHS blank tape. • STOP (E-E) mode • EDIT switch: ON • Connect the oscilloscope to test points (TPs).	TP801/CR-42 (D-1)  Minimize the A level. (A≦20 mV)	⊘ CV801/CR-42 (D-2) ⊘ RV801/CR-42 (D-2) • Adjust alternately. Trigger : TP301/VO-37A (C-5)

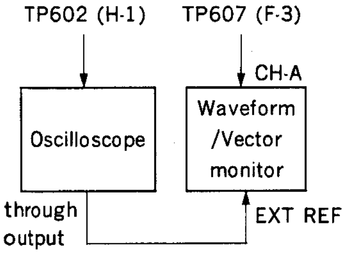
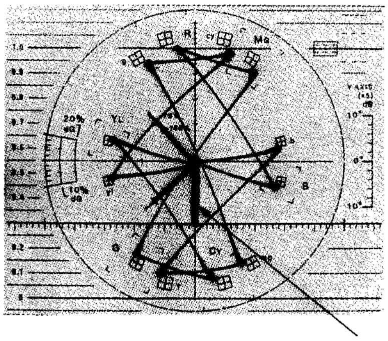
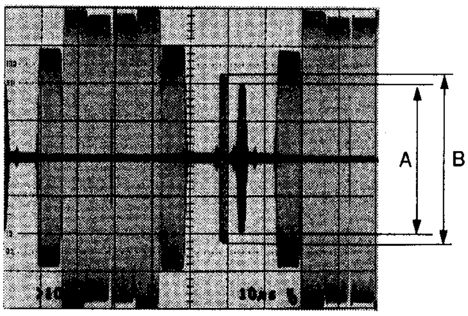
10-22. CPI ADJUSTMENT (2)

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : CHROMA NOISE signal • Insert a S-VHS blank tape. • STOP (E-E) mode • EDIT switch: ON • Connect the oscilloscope to test points (TPs).	TP820/CR-42 (A-1)  Minimize the A level. (A≦120 mV)	⊘ CV800/CR-42 (D-2) ⊘ RV800/CR-42 (E-2) • Adjust alternately. Trigger : TP301/VO-37A (C-5)

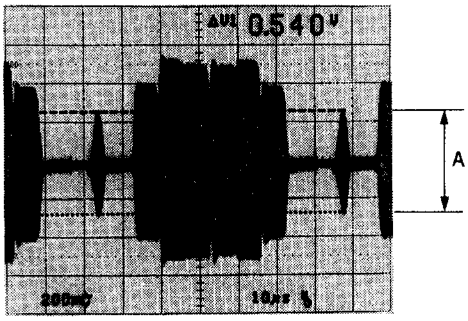
10-23. CPI ADJUSTMENT (3)

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : CHROMA NOISE signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect between TP850/CR-42 (B-1) and TP851/CR-42 (B-1) on the CR-42 board with shorting clip. • EDIT switch: ON • Connect the oscilloscope to test points (TPs). • After the adjustment, remove the shorting clip and set the EDIT switch to OFF.	TP870/CR-42 (C-1)  Minimize the A level. (A≦10 mV)	⊘ CV802/CR-42 (C-2) ⊘ RV802/CR-42 (C-2) • Adjust alternately. Trigger : TP301/VO-37A (C-5)

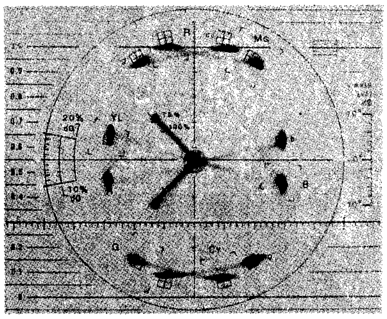
10-24. PILOT BURST ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
- S-VIDEO IN : COLOR BARS signal (WHITE 100%, AMPL 75%) - Insert a S-VHS blank tape. - Stop (E-E) mode - Connect between TP608/CR-42 (F-2) and E601/CR-42 (E-1) on the CR-42 board with shorting clip. - Connect the Waveform Monitor/ Vector Scope and oscilloscope to test points (TPs) on the CR-42 board as follows :  TP602 (H-1) TP607 (F-3) CH-A Oscilloscope Waveform /Vector monitor through output EXT REF Waveform Monitor/Vector Scope - VECTOR - EXT REF - GAIN×5 - UNCAL	TP607/CR-42 (F-3)  PILOT BURST Adjust the CV602 so that the pilot burst dot coincide with regular position.	⊘CV602/CR-42 (E-3) EXT REF : TP602/CR-42 (H-1) (through the oscilloscope)
- Connect the oscilloscope to test points (TPs). - After the adjustment, remove the shorting clip.	TP607/CR-42 (F-3)  $\frac{\text{B (Pilot burst leval)}}{\text{A (Burst level)}} = 110 \pm 5\%$ (A is reference level.)	⊘RV604/CR-42 (G-1) Trigger : TP602/CR-42 (H-2)

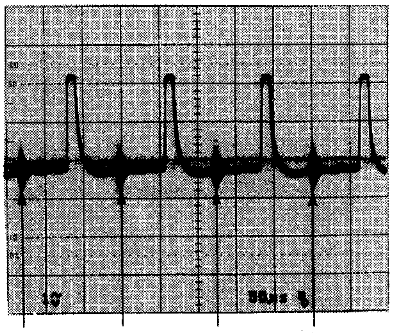
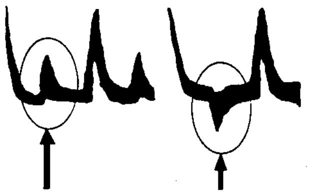
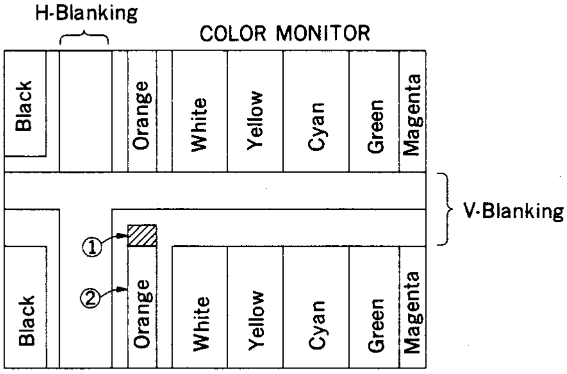
10-25. NR IN CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP890/CR-42 (E-1)  A=0.54±0.02 Vp-p	⊘ RV860/CR-42 (D-1) Trigger: TP301/VO-37A (C-5)

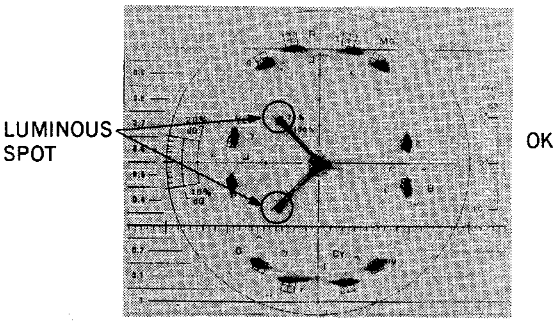
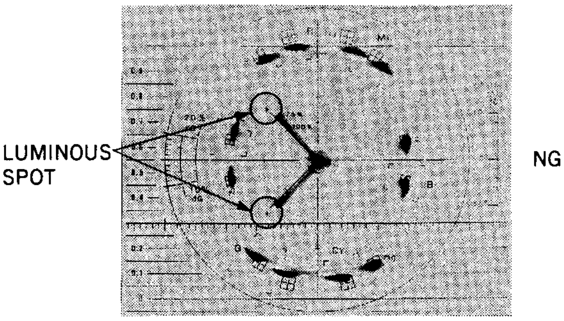
10-26. NR OUT CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform/Vector monitor • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  The luminous spot of burst shall be at 75% position on mark.	⊘ RV401/VO-37A (E-4)

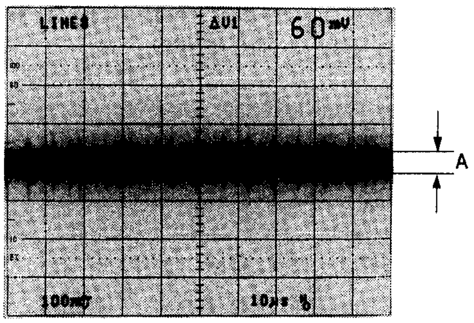
10-27. PB 135° PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect the color monitor to VIDEO OUT connector. • Turn the RV101/NR-40A (J-2) and RV102/NR-40A (J-2) clockwise fully. • Play back the color bars signal portion of the alignment tape KRV-45HPS.	TP106/NR-40A (H-2) OK  (A Portion) (A Portion) Phase error (A portion) is minimum. NG  A Portion A Portion VIDEO OUT connector/rear panel  H-Blanking COLOR MONITOR Black Orange White Yellow Cyan Green Magenta V-Blanking ① ② Black Orange White Yellow Cyan Green Magenta Check that ① portion (quasi burst) and ② portion (burst) are one and the same color (orange).	❶RV101/NR-40A (J-2)
	When the specification is not satisfied, the adjustment should be performed using RV102.	❷RV102/NR-40A (J-2)
Color Monitor • H-V DELAY: ON	If the adjustment cannot be made using RV102, change the shorting position on short land slit (SL1 and SL2) and readjust above items using the RV102.	• Short land slit SL1/NR-40A (H-3) SL2/NR-40A (H-3)

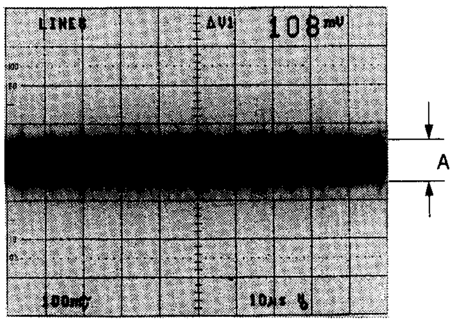
10-28. QUASI BURST LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform Monitor/Vector Scope • VECTOR	VIDEO OUT connector (terminated with 75Ω)   The luminous spots of burst shall be at 75% position on mark. (The level of luminous spots are equal.)	⊘RV103/NR-40A (J-3)

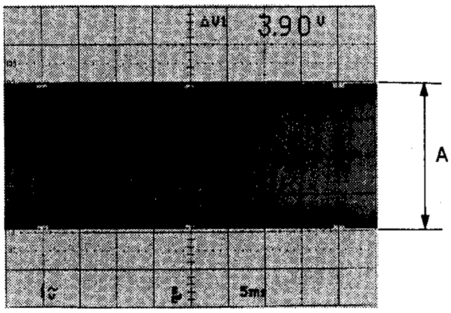
10-29. ANALOG NOISE CANCEL 2H CCD LEVEL/PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test point (TP).	TP201/NR-40A (D-4)  Minimize the A level. (A≦100 mV)	• Phase Adjustment ⊘RV202/NR-40A (E-3) • Level Adjustment ⊘RV204/NR-40A (F-3)

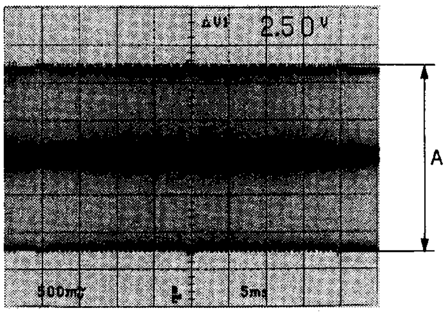
10-30. ANALOG NOISE CANCEL 4.43 NTSC PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion (SP) of the alignment tape KRV-51HN. • SYSTEM SELECT switch : 4.43 NTSC • Connect the oscilloscope to test point (TP). • After the adjustment, set the SYSTEM SELECT switch to PAL.	TP201/NR-40A (D-4)  Minimize the A level. (A≦150 mV)	●RV203/NR-40A (F-3)

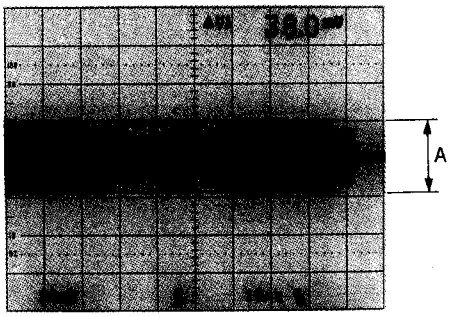
10-31. S-VHS Y REC CURRENT ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : 50% FLAT FIELD signal • Insert a S-VHS blank tape. • REC mode • Connect the oscilloscope to connector pin (Pin 3 of CN804). (When using RP extension tool, connect the oscilloscope to TP terminals of VIDEO REC CURR. and SW'ING PULSE.)	CN804-3/RP-62A (C-1) (RP extension tool: VIDEO REC CURR terminal)  A=3.9±0.1 V p-p	●RV210/VO-37A (K-1) Trigger: CN804-5/RP-62A (C-1) (RP extension tool: SW'ING PULSE terminal)

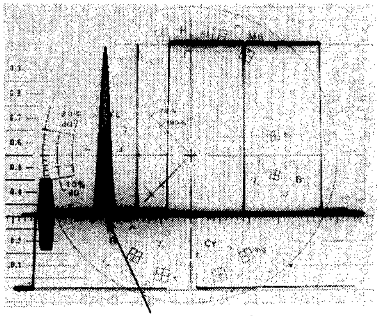
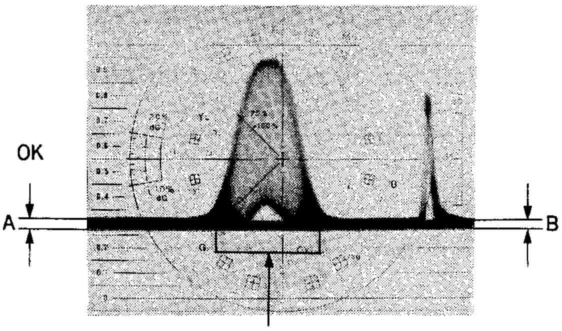
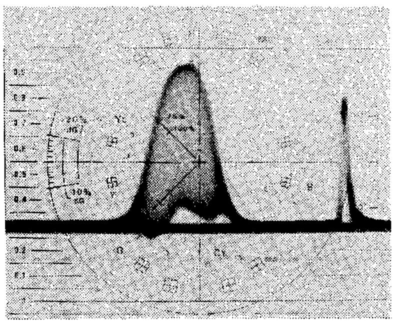
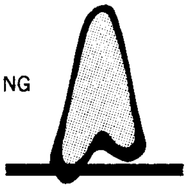
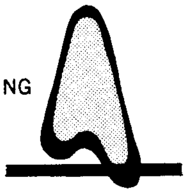
10-32. N-VHS Y REC CURRENT ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO INPUT SELECT switch : LINE • VIDEO IN : 50% FLAT FIELD signal • Insert a N-VHS blank tape. • REC mode • Connect the oscilloscope to connector pin (Pin 3 of CN804). (When using RP extension tool, connect the oscilloscope to TP terminals of VIDEO REC CURR. and SW'ING PULSE.) • After the adjustment, set the VIDEO INPUT SELECT switch to S-VIDEO.	CN804-3/RP-62A (C-1) (RP extension tool: VIDEO REC CURR. terminal)  A=2.5±0.1 V p-p	⊘RV211/VO-37A (L-1) Trigger: CN804-5/RP-62A (C-1) (RP extension tool: SW'ING PULSE terminal)

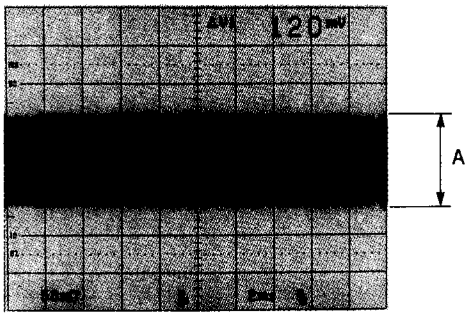
10-33. S-VHS CHROMA REC CURRENT ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN: COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • REC mode • Connect the oscilloscope to test points (TPs).	TP210/VO-37A (J-1)  A=38±2 mV p-p	⊘RV260/VO-37A (K-1) Trigger: TP301/VO-37A (C-5)

10-34. OVERALL Y/C DELAY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
- S-VIDEO IN : PULSE & BAR signal - Perform the self-recording/play back (measurement) with a S-VHS blank tape. Waveform Monitor/Vector Scope WAVEFORM - HORIZONTAL MAG: ON - GAIN X5 - UNCAL	VIDEO OUT connector (terminated with 75 Ω)  Modulation pulse OK  Bottom side portion A=B NG  Flatten the bottom side portion (envelope) of modulation pulse. NG  Chroma Signal Delay NG  Chroma Signal Advance	⓿RV601/CR-42 (F-3)

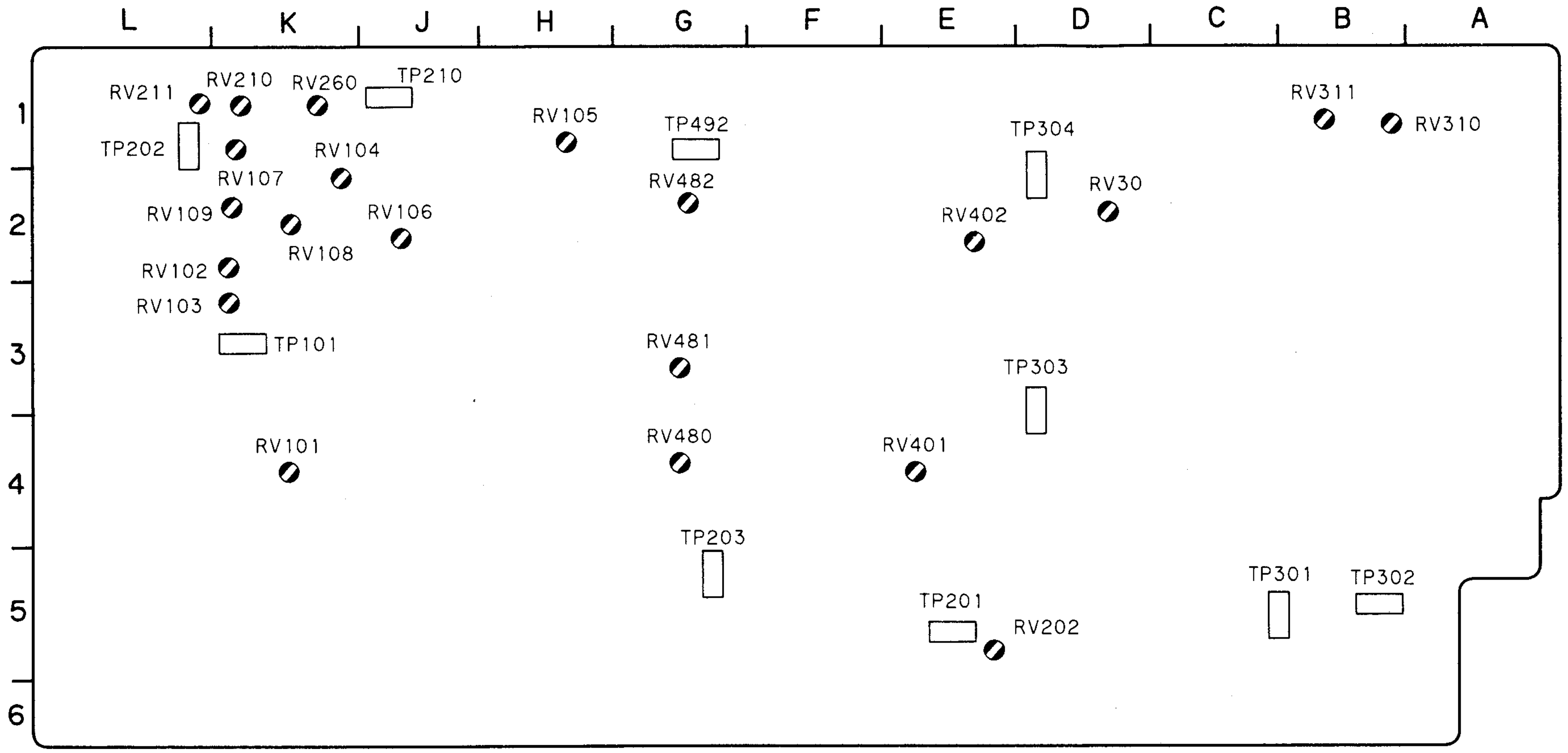
10-35. OVERALL Y RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Turn the RV201/RP-62A (B-1) to mechanical center position. • Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to connector pin (Pin 2 of CN804). (When using RP extension tool, connect the oscilloscope to TP terminals of VIDEO PB S-VHS RF and SW'ING PULSE.)	CN804-2/RP-62A (C-1) (RP extension tool: VIDEO PB S-VHS RF terminal)  Check that the Y RF signal is output on CN804-2. (A=120±20 mV p-p)	Trigger: CN804-5/RP-62A (C-1) (RP extension tool: SW'ING PULSE terminal)

10-36. TRACKING METER ADJUSTMENT

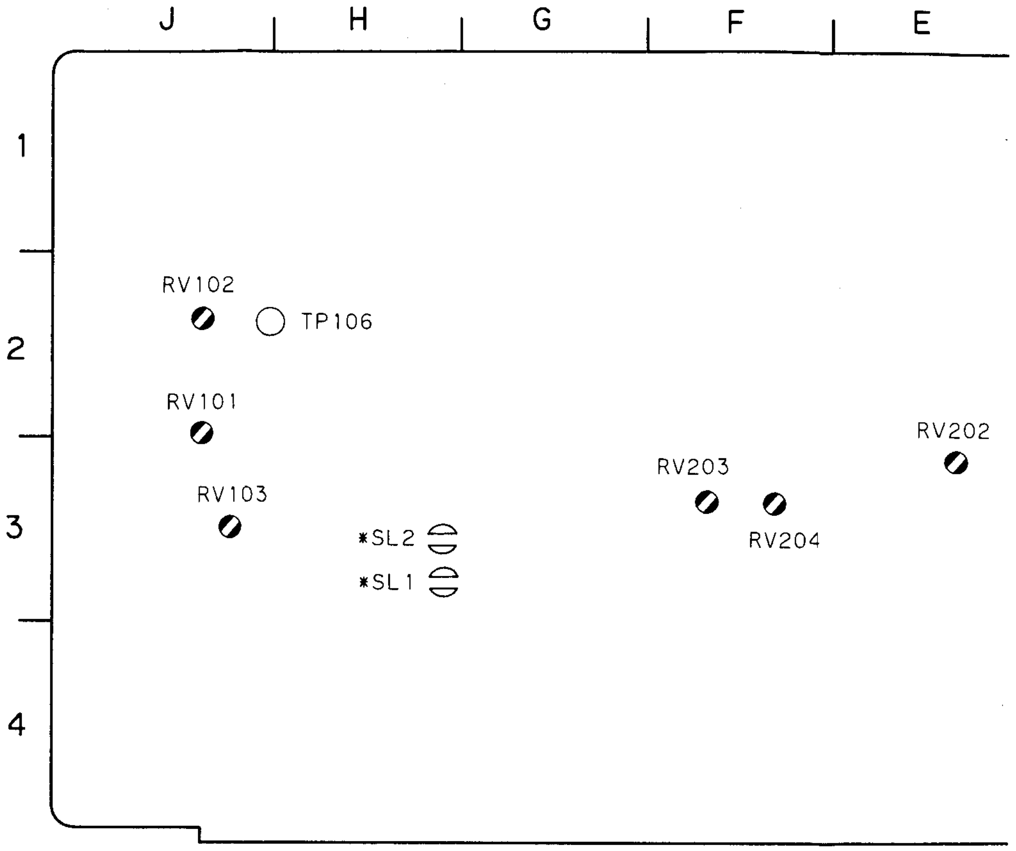
Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN: COLOR BARS signal (WHITE 100%, AMPL 75%) • CH-2 METER switch (KEY PANEL) : TRACKING • Tracking Control VR: center click (FIXED) • Perform the self-recording/play back (measurement) with a S-VHS blank tape.	The pointer (on CH-2 meter) reading should be "0 dB".	⊘ RV700/CR-42 (H-3)

Location of RVs and TPs on VO-37A board. (B side)

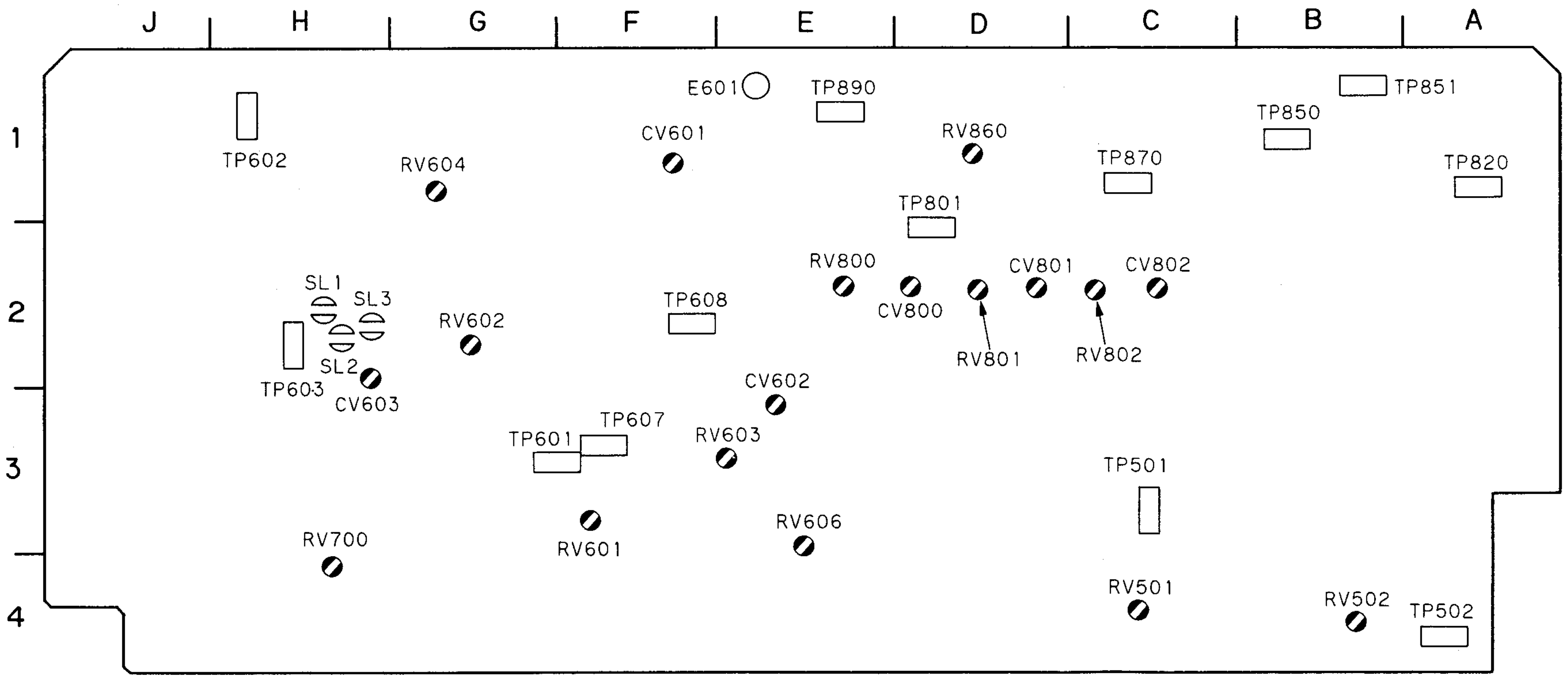

L
K
J
H
G
F
E
D
C
B
A
1
2
3
4
5
6
RV211
RV210
RV260
TP210
TP202
RV104
RV107
RV109
RV106
RV108
RV102
RV103
TP101
RV101
RV105
TP492
RV482
RV481
RV480
TP203
TP304
RV30
RV402
TP303
RV401
TP201
RV202
RV311
RV310
TP301
TP302

Location of RVs, SLs and TPs on NR-40A board. (A side)

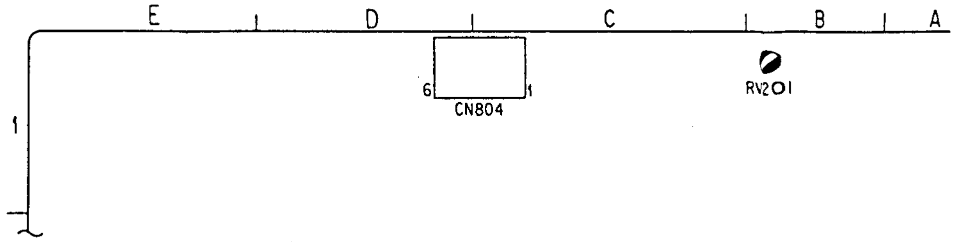
＊ mark ; B side mount

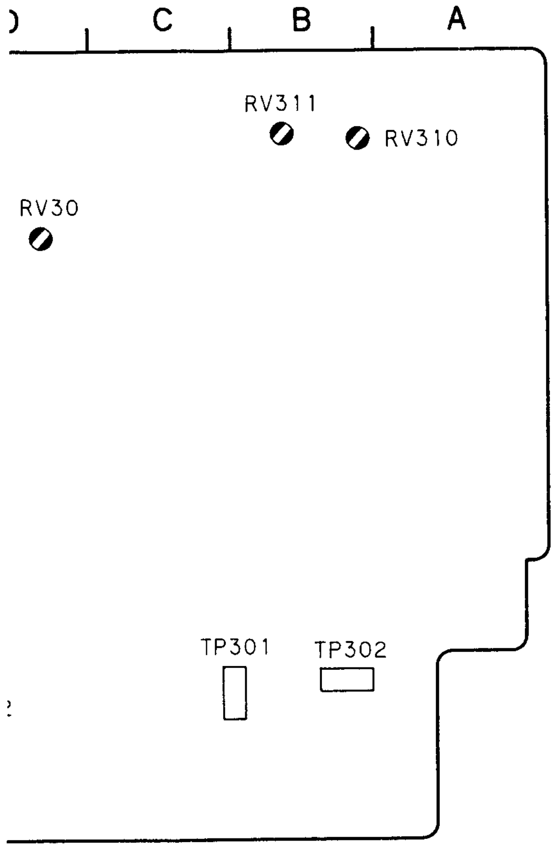

J
H
G
F
E
1
2
3
4
RV102
TP106
RV101
RV103
＊SL2
＊SL1
RV203
RV204
RV202

Location of CVs, E, RVs, SLs and TPs on CR-42 board. (B side)


J
H
G
F
E
D
C
B
A
1
2
3
4
TP602
RV604
CV601
E601
TP890
RV860
TP850
TP851
TP870
TP820
TP801
SL1
SL3
SL2
TP603
CV603
RV602
TP608
RV800
CV800
CV801
CV802
RV801
RV802
CV602
TP601
TP607
RV603
RV601
RV606
RV700
TP501
RV501
RV502
TP502

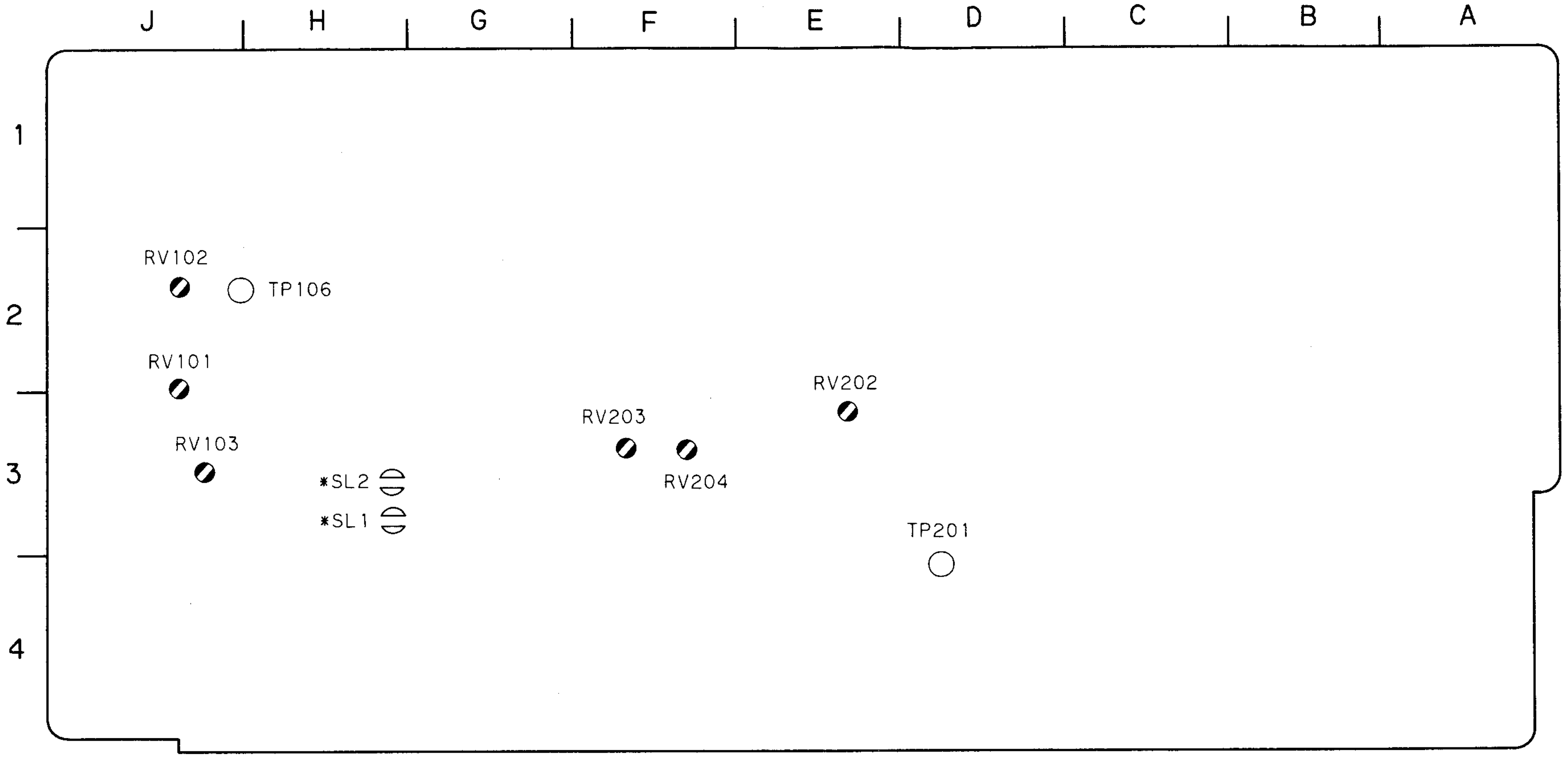
Location of CN and RV on RP-62A board. (A side)


E
D
C
B
A
1
6
1
CN804
RV201

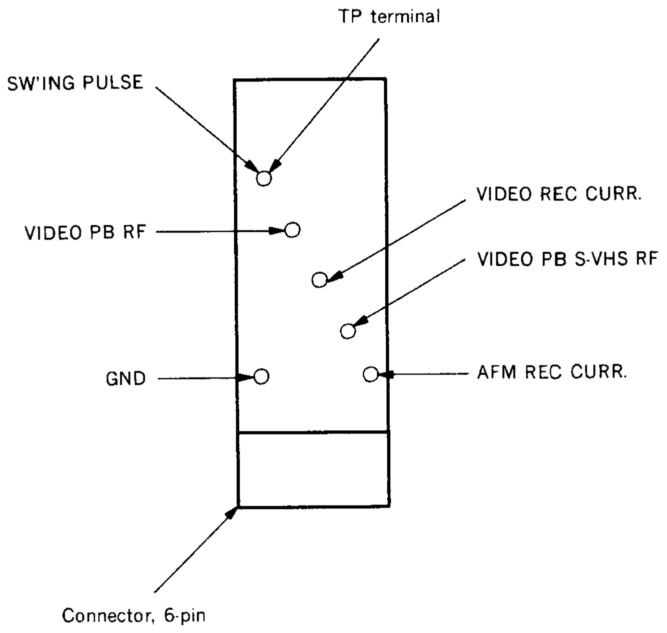

C
B
A
RV311
RV310
RV30
TP301
TP302

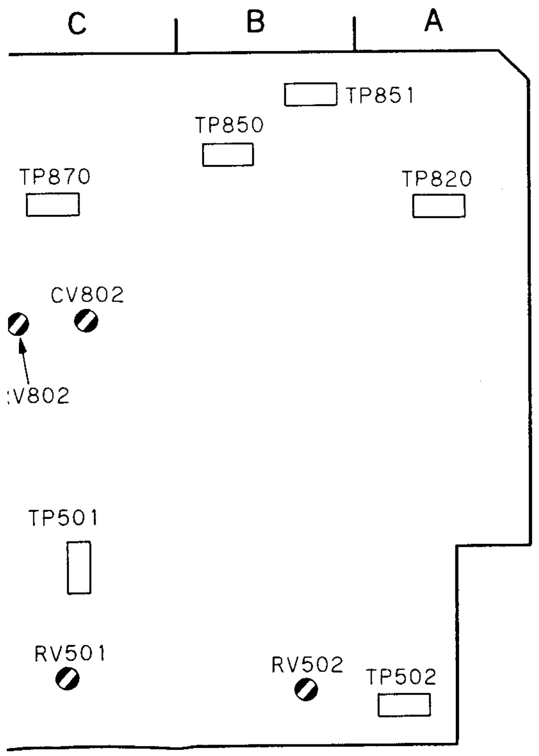
Location of RVs, SLs and TPs on NR-40A board. (A side)

∗ mark ; B side mount

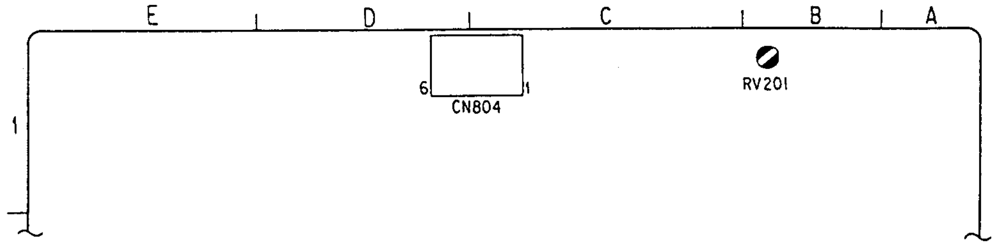

J
H
G
F
E
D
C
B
A
1
2
3
4
RV102
TP106
RV101
RV103
∗SL2
∗SL1
RV203
RV204
RV202
TP201

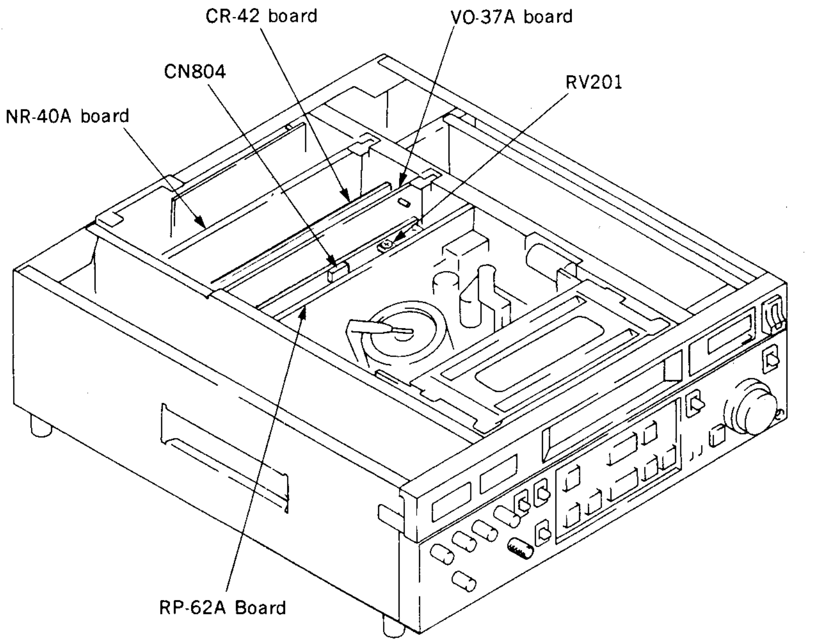
Location of TP terminals on RP extension tool


TP terminal
SW'ING PULSE
VIDEO PB RF
VIDEO REC CURR.
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6-pin


C
B
A
TP851
TP850
TP870
TP820
CV802
:V802
TP501
RV501
RV502
TP502

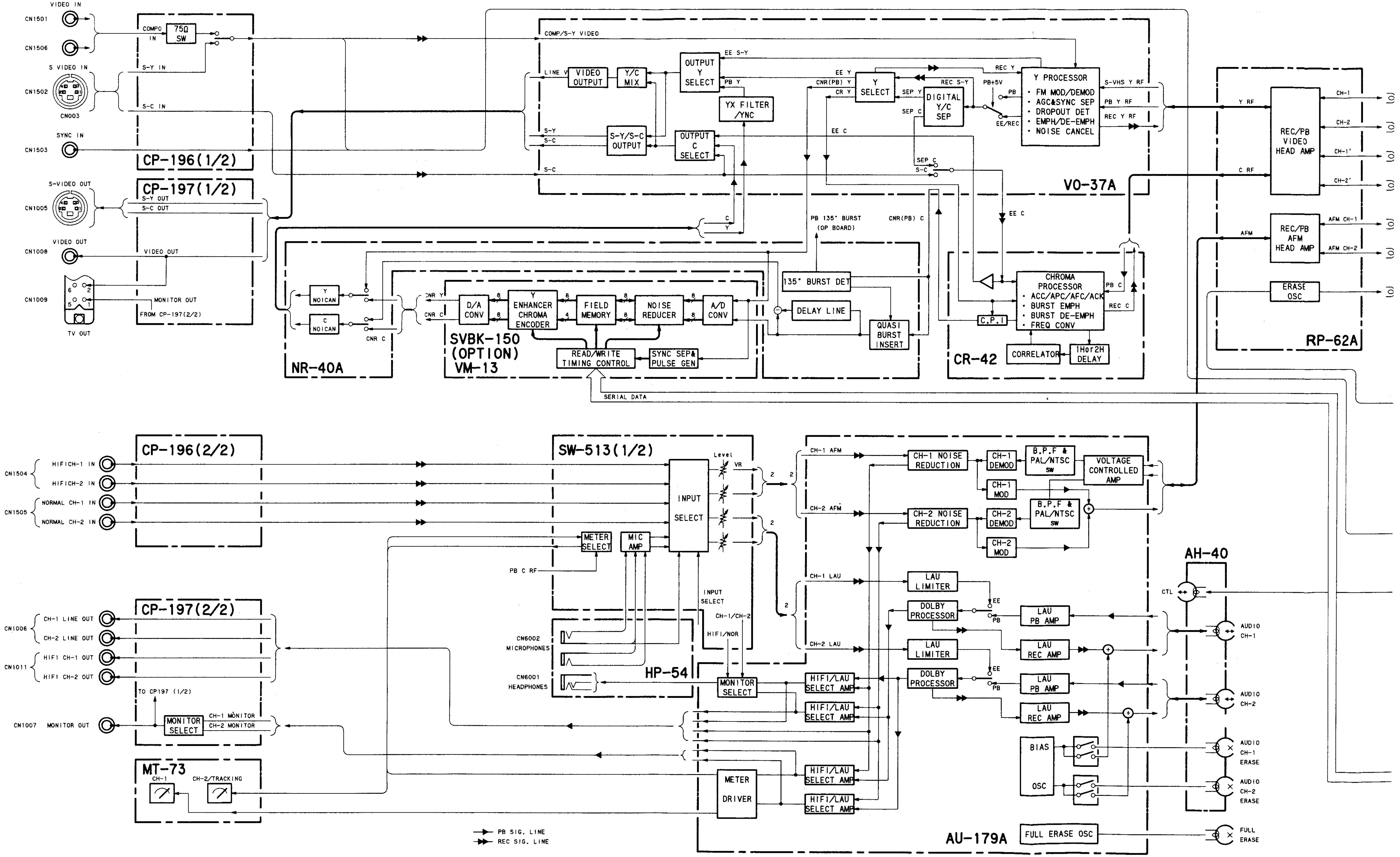
Location of CN and RV on RP-62A board. (A side)

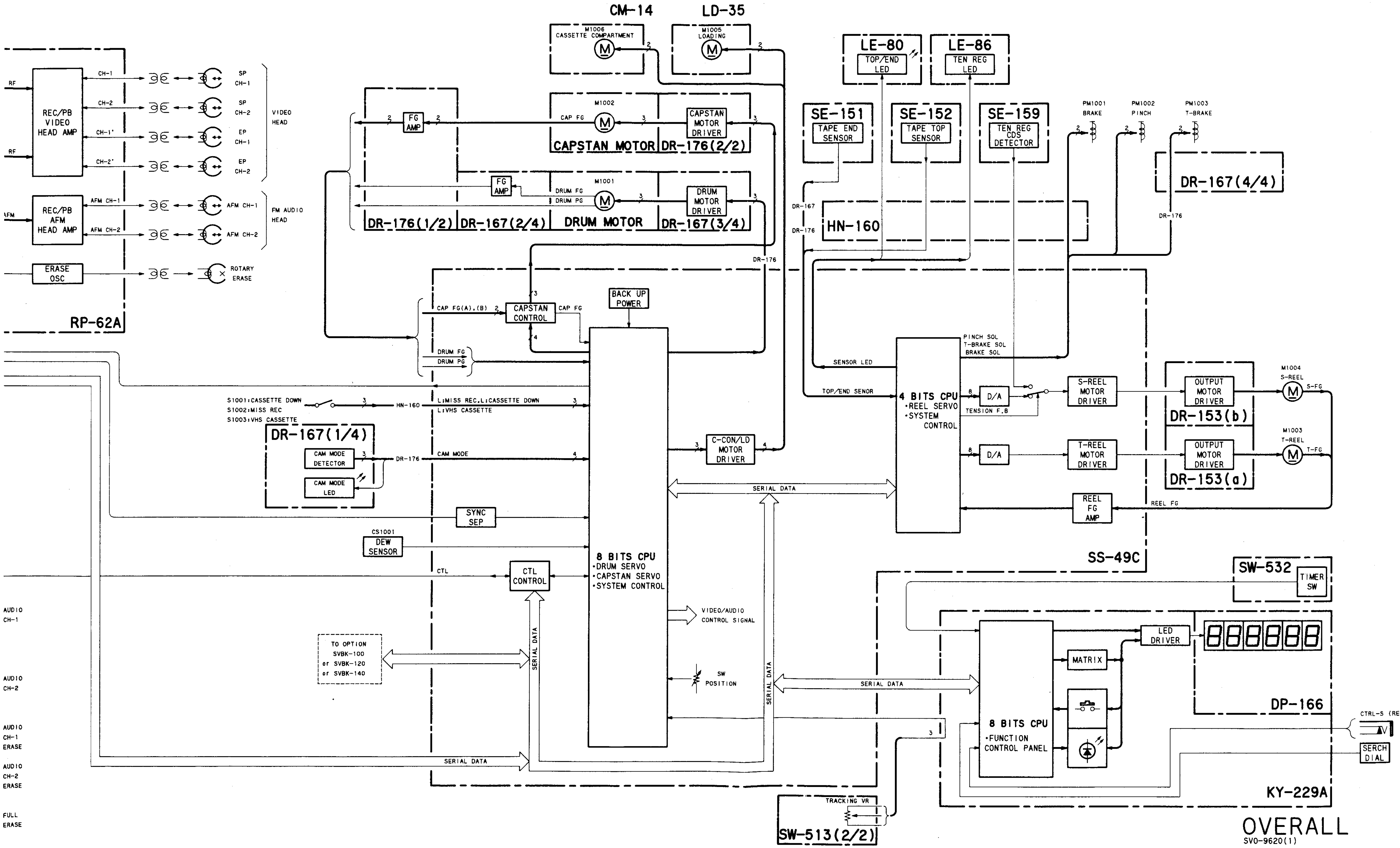

E
D
C
B
A
1
6
1
CN804
RV201


CR-42 board
VO-37A board
CN804
RV201
NR-40A board
RP-62A Board

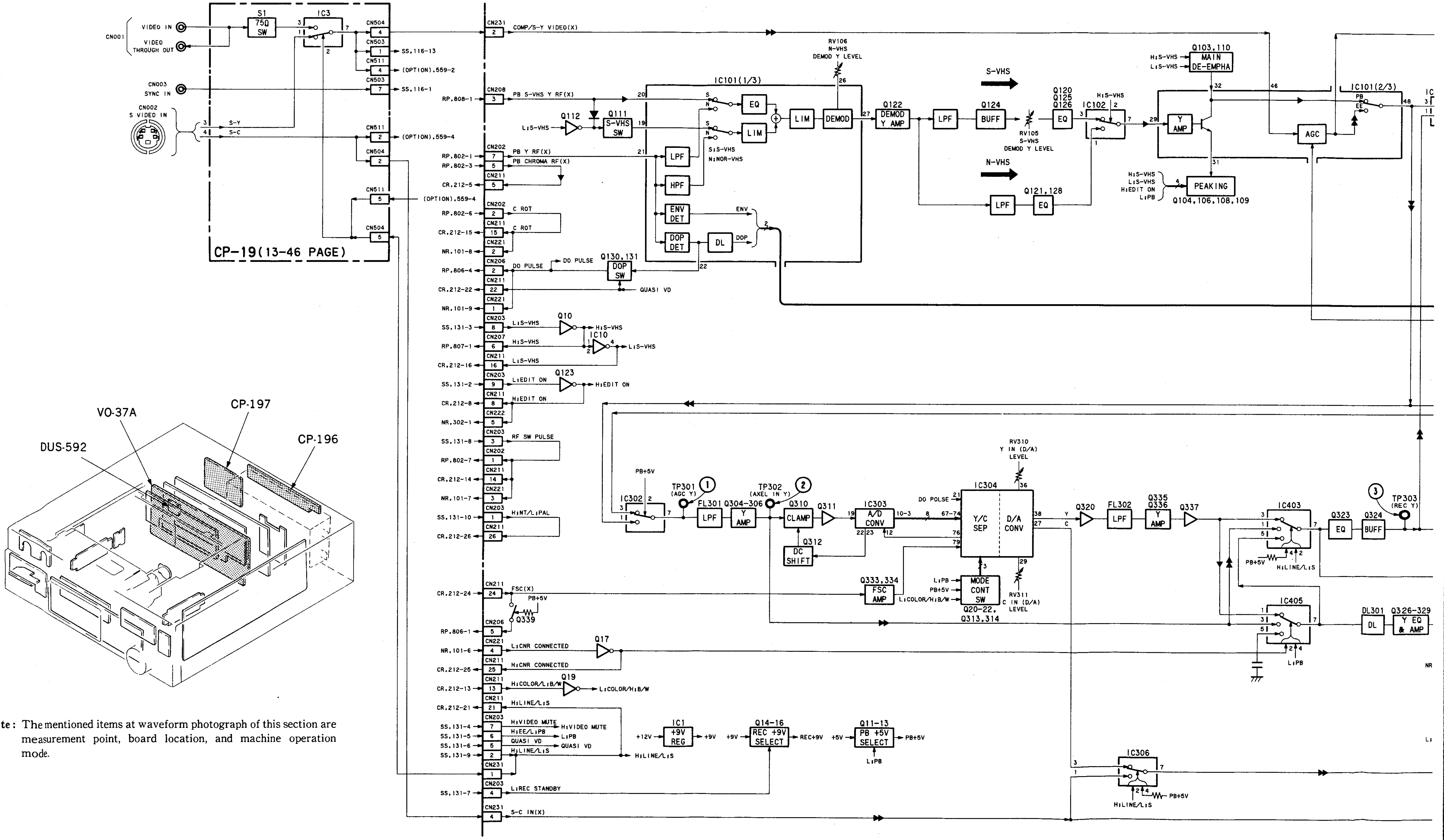
SECTION 11
BLOCK DIAGRAMS

OVERALL

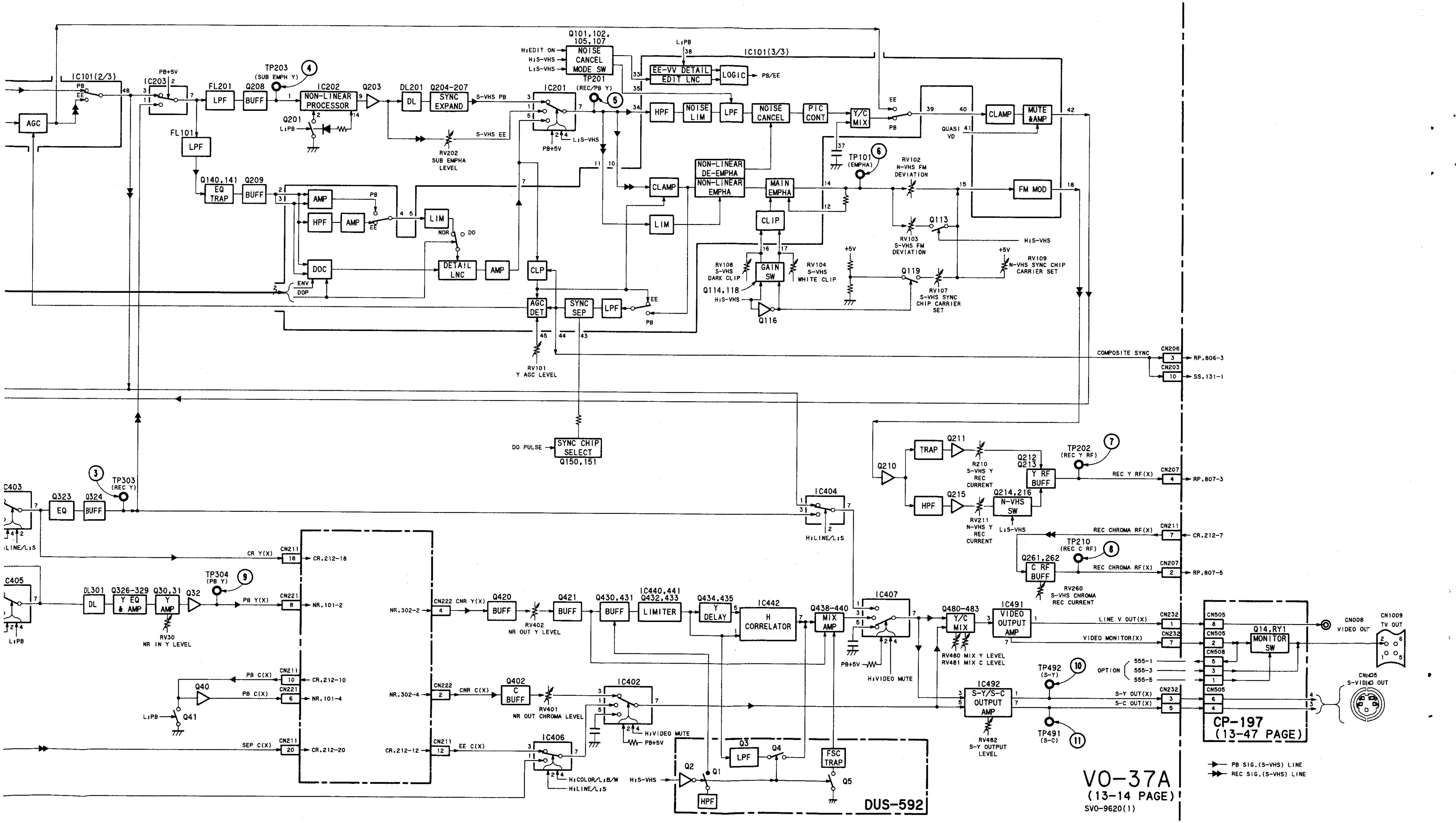

VIDEO IN
CN1501
CN1506
S VIDEO IN
CN1502
CN003
SYNC IN
CN1503
S-VIDEO OUT
CN1005
VIDEO OUT
CN1008
CN1009
TV OUT
COMPO IN
75Ω SW
S-Y IN
S-C IN
CP-196(1/2)
CP-197(1/2)
S-Y OUT
S-C OUT
VIDEO OUT
MONITOR OUT
FROM CP-197(2/2)
COMP/S-Y VIDEO
LINE V
VIDEO OUTPUT
Y/C MIX
OUTPUT Y SELECT
EE S-Y
PB Y
YX FILTER /YNC
S-Y
S-C
S-Y/S-C OUTPUT
OUTPUT C SELECT
S-C
EE Y
CNR(PB) Y
CR Y
Y SELECT
SEP Y
SEP C
DIGITAL Y/C SEP
REC S-Y
PB+5V
PB
EE/REC
REC Y
Y PROCESSOR
· FM MOD/DEMOD
· AGC&SYNC SEP
· DROPOUT DET
· EMPH/DE-EMPH
· NOISE CANCEL
S-VHS Y RF
PB Y RF
REC Y RF
EE C
SEP C
S-C
VO-37A
C
Y
PB 135° BURST (OP BOARD)
CNR(PB) C
EE C
Y NOICAN
C NOICAN
CNR C
CNR Y
CNR C
NR-40A
D/A CONV
Y ENHANCER CHROMA ENCODER
FIELD MEMORY
NOISE REDUCER
A/D CONV
8
4
READ/WRITE TIMING CONTROL
SYNC SEP& PULSE GEN
SVBK-150 (OPTION) VM-13
135° BURST DET
DELAY LINE
QUASI BURST INSERT
CHROMA PROCESSOR
· ACC/APC/AFC/ACK
· BURST EMPH
· BURST DE-EMPH
· FREQ CONV
C.P.I
CORRELATOR
1Hor2H DELAY
PB C
REC C
CR-42
SERIAL DATA
Y RF
C RF
REC/PB VIDEO HEAD AMP
CH-1
CH-2
CH-1'
CH-2'
AFM
REC/PB AFM HEAD AMP
AFM CH-1
AFM CH-2
ERASE OSC
RP-62A
CP-196(2/2)
CN1504
HIFICH-1 IN
HIFICH-2 IN
CN1505
NORMAL CH-1 IN
NORMAL CH-2 IN
SW-513(1/2)
Level
VR
INPUT SELECT
METER SELECT
MIC AMP
PB C RF
INPUT SELECT
CH-1/CH-2
HIFI/NOR
CN6002 MICROPHONES
CN6001 HEADPHONES
HP-54
CP-197(2/2)
CN1006
CH-1 LINE OUT
CH-2 LINE OUT
CN1011
HIFI CH-1 OUT
HIFI CH-2 OUT
TO CP197 (1/2)
CN1007 MONITOR OUT
MONITOR SELECT
CH-1 MONITOR
CH-2 MONITOR
MT-73
CH-1
CH-2/TRACKING
MONITOR SELECT
METER DRIVER
HIFI/LAU SELECT AMP
CH-1 AFM
CH-2 AFM
CH-1 NOISE REDUCTION
CH-2 NOISE REDUCTION
CH-1 DEMOD
CH-1 MOD
CH-2 DEMOD
CH-2 MOD
B.P.F & PAL/NTSC SW
VOLTAGE CONTROLLED AMP
CH-1 LAU
CH-2 LAU
LAU LIMITER
DOLBY PROCESSOR
EE
PB
LAU PB AMP
LAU REC AMP
BIAS
OSC
FULL ERASE OSC
AU-179A
AH-40
CTL
AUDIO CH-1
AUDIO CH-2
AUDIO CH-1 ERASE
AUDIO CH-2 ERASE
FULL ERASE
PB SIG. LINE
REC SIG. LINE


CM-14
M1006 CASSETTE COMPARTMENT
LD-35
M1005 LOADING
LE-80
TOP/END LED
LE-86
TEN REG LED
SE-151
TAPE END SENSOR
SE-152
TAPE TOP SENSOR
SE-159
TEN REG CDS DETECTOR
PM1001 BRAKE
PM1002 PINCH
PM1003 T-BRAKE
DR-167(4/4)
RF
REC/PB VIDEO HEAD AMP
CH-1
CH-2
CH-1'
CH-2'
SP CH-1
SP CH-2
EP CH-1
EP CH-2
VIDEO HEAD
AFM
REC/PB AFM HEAD AMP
AFM CH-1
AFM CH-2
FM AUDIO HEAD
ERASE OSC
ROTARY ERASE
RP-62A
FG AMP
M1002
CAP FG
CAPSTAN MOTOR DRIVER
CAPSTAN MOTOR
DR-176(2/2)
M1001
DRUM FG
DRUM PG
DRUM MOTOR DRIVER
DR-176(1/2)
DR-167(2/4)
DRUM MOTOR
DR-167(3/4)
DR-176
DR-167
HN-160
CAP FG(A),(B)
CAPSTAN CONTROL
CAP FG
BACK UP POWER
DRUM FG
DRUM PG
S1001:CASSETTE DOWN
S1002:MISS REC
S1003:VHS CASSETTE
HN-160
L:MISS REC,L:CASSETTE DOWN
L:VHS CASSETTE
DR-167(1/4)
CAM MODE DETECTOR
CAM MODE LED
CAM MODE
C-CON/LD MOTOR DRIVER
SERIAL DATA
SYNC SEP
CS1001
DEW SENSOR
CTL
CTL CONTROL
8 BITS CPU
•DRUM SERVO
•CAPSTAN SERVO
•SYSTEM CONTROL
VIDEO/AUDIO CONTROL SIGNAL
SW POSITION
TO OPTION SVBK-100 or SVBK-120 or SVBK-140
AUDIO CH-1
AUDIO CH-2
AUDIO CH-1 ERASE
AUDIO CH-2 ERASE
FULL ERASE
SENSOR LED
TOP/END SENOR
PINCH SOL
T-BRAKE SOL
BRAKE SOL
4 BITS CPU
•REEL SERVO
•SYSTEM CONTROL
D/A
TENSION F.B
S-REEL MOTOR DRIVER
T-REEL MOTOR DRIVER
OUTPUT MOTOR DRIVER
DR-153(b)
DR-153(a)
M1004 S-REEL
S-FG
M1003 T-REEL
T-FG
REEL FG AMP
REEL FG
SS-49C
SW-532
TIMER SW
LED DRIVER
MATRIX
DP-166
8 BITS CPU
•FUNCTION CONTROL PANEL
CTRL-S (REMOTE)
SERCH DIAL
KY-229A
TRACKING VR
SW-513(2/2)
OVERALL
SVO-9620(1)

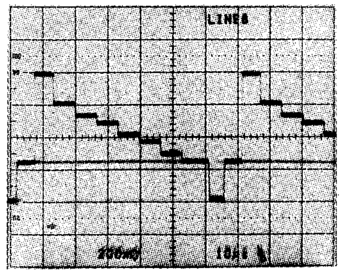
Y/C VIDEO PROCESS


CN001
VIDEO IN
VIDEO THROUGH OUT
CN003
SYNC IN
CN002
S VIDEO IN
S-Y
S-C
S1
75Ω SW
IC3
CN504
CN503
CN511
SS,116-13
(OPTION),559-2
SS,116-1
(OPTION),559-4
(OPTION),559-4
CP-19(13-46 PAGE)
CN231
COMP/S-Y VIDEO(X)
CN208
PB S-VHS Y RF(X)
RP,808-1
CN202
PB Y RF(X)
PB CHROMA RF(X)
RP,802-1
RP,802-3
CN211
CR,212-5
C ROT
RP,802-6
CR,212-15
CN221
NR,101-8
CN206
DO PULSE
RP,806-4
CR,212-22
NR,101-9
Q130,131
DOP SW
QUASI VD
CN203
SS,131-3
CN207
RP,807-1
CR,212-16
Q10
IC10
L:S-VHS
H:S-VHS
SS,131-2
Q123
L:EDIT ON
H:EDIT ON
CR,212-8
CN222
NR,302-1
SS,131-8
RF SW PULSE
RP,802-7
CR,212-14
NR,101-7
SS,131-10
H:NT/L:PAL
CR,212-26
CR,212-24
FSC(X)
PB+5V
Q339
RP,806-1
Q17
NR,101-6
L:CNR CONNECTED
CR,212-25
H:CNR CONNECTED
Q19
CR,212-13
H:COLOR/L:B/W
L:COLOR/H:B/W
CR,212-21
H:LINE/L:S
SS,131-4
SS,131-5
SS,131-6
SS,131-9
H:VIDEO MUTE
H:EE/L:PB
QUASI VD
SS,131-7
L:REC STANDBY
S-C IN(X)
Q112
Q111
S-VHS SW
IC101(1/3)
EQ
LIM
LPF
HPF
ENV DET
DOP DET
DL
ENV
DOP
S:S-VHS
N:NOR-VHS
DEMOD
RV106
N-VHS
DEMOD Y LEVEL
Q122
DEMOD Y AMP
S-VHS
N-VHS
Q124
BUFF
RV105
S-VHS
DEMOD Y LEVEL
Q120
Q125
Q126
IC102
Q121,128
Y AMP
Q103,110
MAIN DE-EMPHA
PEAKING
Q104,106,108,109
H:EDIT ON
L:PB
AGC
IC101(2/3)
PB
EE
IC302
TP301
(AGC Y)
①
FL301
Q304-306
Y AMP
TP302
(AXEL IN Y)
②
Q310
CLAMP
Q311
IC303
A/D CONV
Q312
DC SHIFT
IC304
Y/C SEP
D/A CONV
RV310
Y IN (D/A) LEVEL
RV311
C IN (D/A) LEVEL
Q333,334
FSC AMP
MODE CONT SW
Q20-22,
Q313,314
Q320
FL302
Q335
Q336
Q337
IC403
IC405
Q323
Q324
③
TP303
(REC Y)
DL301
Q326-329
Y EQ & AMP
IC306
IC1
+9V REG
+12V
Q14-16
REC +9V SELECT
REC+9V
Q11-13
PB +5V SELECT
PB+5V
L:PB
VO-37A
CP-197
CP-196
DUS-592

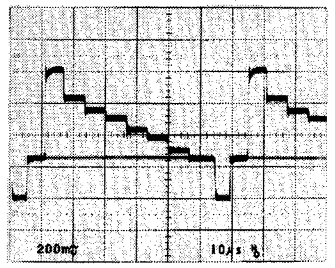
Note : The mentioned items at waveform photograph of this section are measurement point, board location, and machine operation mode.


IC101(2/3)
PB
EE
48
AGC
IC203
PB+5V
FL201
LPF
Q208
BUFF
TP203
(SUB EMPH Y)
④
IC202
NON-LINEAR PROCESSOR
Q203
DL201
DL
Q204-207
SYNC EXPAND
S-VHS PB
S-VHS EE
Q201
L:PB
RV202
SUB EMPHA LEVEL
FL101
LPF
Q140,141
EQ TRAP
Q209
BUFF
AMP
HPF
AMP
PB
EE
LIM
NOR
DO
DOC
DETAIL LNC
AMP
ENV
DOP
Q101,102,105,107
H:EDIT ON
H:S-VHS
L:S-VHS
NOISE CANCEL MODE SW
IC201
TP201
(REC/PB Y)
⑤
PB+5V
L:S-VHS
L:PB
IC101(3/3)
EE-VV DETAIL
EDIT LNC
LOGIC
PB/EE
HPF
NOISE LIM
LPF
NOISE CANCEL
PIC CONT
Y/C MIX
EE
PB
CLAMP
MUTE &AMP
QUASI VD
NON-LINEAR DE-EMPHA
NON-LINEAR EMPHA
MAIN EMPHA
CLAMP
LIM
CLIP
TP101
(EMPHA)
⑥
RV102
N-VHS FM DEVIATION
FM MOD
RV103
S-VHS FM DEVIATION
Q113
H:S-VHS
GAIN SW
RV108
S-VHS DARK CLIP
RV104
S-VHS WHITE CLIP
Q114,118
H:S-VHS
Q116
+5V
Q119
RV107
S-VHS SYNC CHIP CARRIER SET
+5V
RV109
N-VHS SYNC CHIP CARRIER SET
CLP
AGC DET
SYNC SEP
LPF
EE
PB
RV101
Y AGC LEVEL
COMPOSITE SYNC
CN206
RP,806-3
CN203
SS,131-1
DO PULSE
SYNC CHIP SELECT
Q150,151
Q210
TRAP
Q211
R210
S-VHS Y REC CURRENT
Q212
Q213
Y RF BUFF
TP202
(REC Y RF)
⑦
REC Y RF(X)
CN207
RP,807-3
HPF
Q215
RV211
N-VHS Y REC CURRENT
Q214,216
N-VHS SW
L:S-VHS
REC CHROMA RF(X)
CN211
CR,212-7
TP210
(REC C RF)
⑧
Q261,262
C RF BUFF
REC CHROMA RF(X)
CN207
RP,807-5
RV260
S-VHS CHROMA REC CURRENT
IC403
Q323
EQ
Q324
BUFF
③
TP303
(REC Y)
H:LINE/L:S
CR Y(X)
CN211
CR,212-18
IC404
H:LINE/L:S
IC405
DL301
DL
Q326-329
Y EQ & AMP
Q30,31
Y AMP
Q32
TP304
(PB Y)
⑨
PB Y(X)
CN221
NR,101-2
L:PB
RV30
NR IN Y LEVEL
NR,302-2
CN222
CNR Y(X)
Q420
BUFF
RV402
NR OUT Y LEVEL
Q421
BUFF
Q430,431
BUFF
IC440,441
Q432,433
LIMITER
Q434,435
Y DELAY
IC442
H CORRELATOR
Q438-440
MIX AMP
IC407
PB+5V
H:VIDEO MUTE
Q480-483
Y/C MIX
RV480 MIX Y LEVEL
RV481 MIX C LEVEL
IC491
VIDEO OUTPUT AMP
LINE V OUT(X)
VIDEO MONITOR(X)
CN232
CN505
CN508
Q14,RY1
MONITOR SW
CN008
VIDEO OUT
CN1009
TV OUT
OPTION
555-1
555-3
555-5
PB C(X)
CN211
CR,212-10
Q40
PB C(X)
CN221
NR,101-4
L:PB
Q41
NR,302-4
CN222
CNR C(X)
Q402
C BUFF
RV401
NR OUT CHROMA LEVEL
IC402
H:VIDEO MUTE
PB+5V
TP492
(S-Y)
⑩
IC492
S-Y/S-C OUTPUT AMP
RV482
S-Y OUTPUT LEVEL
S-Y OUT(X)
S-C OUT(X)
TP491
(S-C)
⑪
CN005
S-VIDEO OUT
CP-197
(13-47 PAGE)
SEP C(X)
CN211
CR,212-20
CR,212-12
CN211
EE C(X)
IC406
H:COLOR/L:B/W
H:LINE/L:S
Q3
LPF
Q4
FSC TRAP
Q2
Q1
H:S-VHS
HPF
Q5
DUS-592
VO-37A
(13-14 PAGE)
SVO-9620(1)
PB SIG.(S-VHS) LINE
REC SIG.(S-VHS) LINE

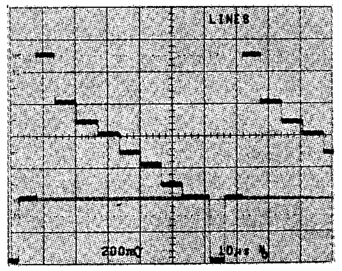
① TP301 (C-5∗) STOP (E-E) mode



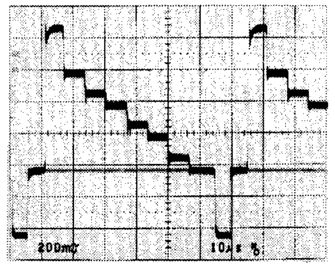
TP301 (C-5∗) PB mode



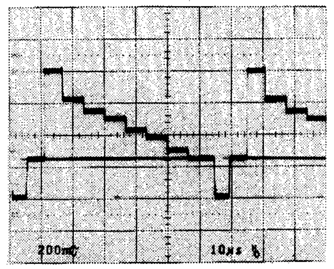
② TP302 (A-5∗) STOP (E-E) mode



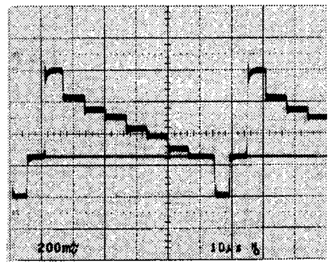
TP302 (A-5∗) PB mode



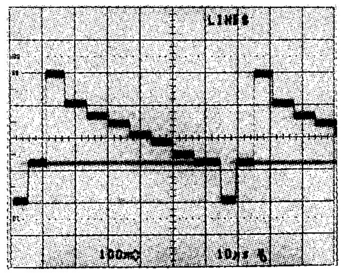
③ TP303 (D-4∗) STOP (E-E) mode



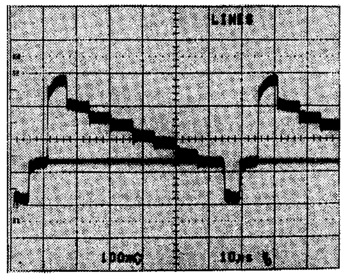
TP303 (D-4∗) PB mode



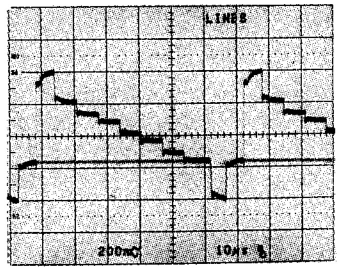
④ TP203 (G-5∗) STOP (E-E) mode



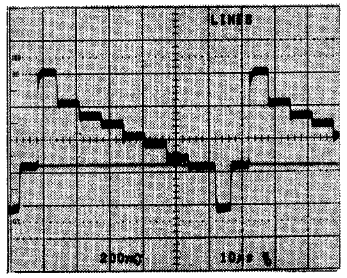
TP203 (G-5∗) PB mode



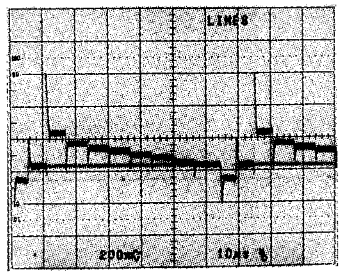
⑤ TP201 (E-5∗) STOP (E-E) mode



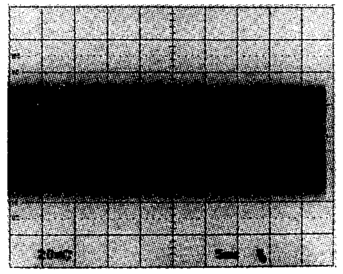
TP201 (E-5∗) PB mode



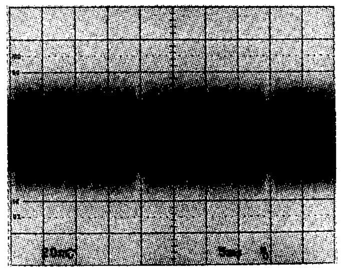
⑥ TP101 (K-3∗) STOP (E-E) mode



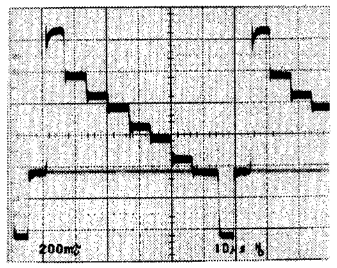
⑦ TP202 (L-1∗) STOP (E-E) mode



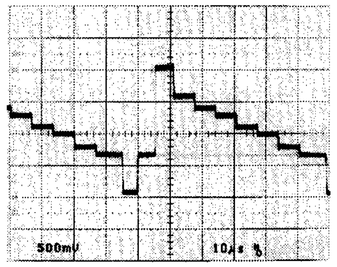
⑧ TP210 (J-1∗) STOP (E-E) mode



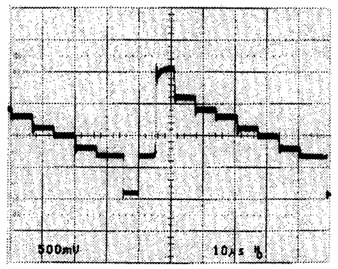
⑨ TP304 (D-2∗) PB mode



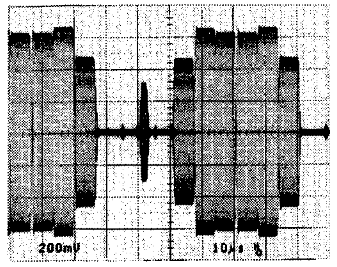
⑩ TP492 (G-1∗) STOP (E-E) mode



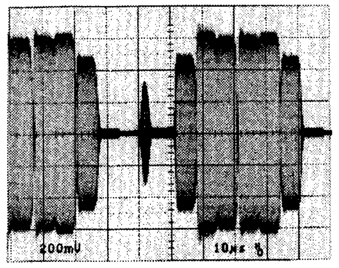
TP492 (G-1∗) PB mode



⑪ TP491 (H-1∗) STOP (E-E) mode



TP491 (H-1∗) PB mode

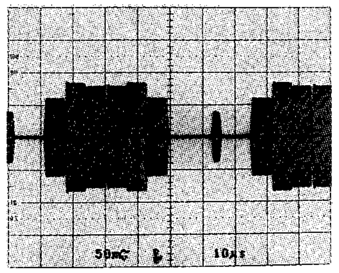


Measurement Condition

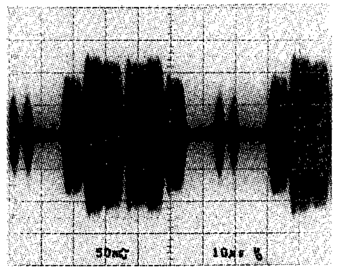
S-VIDEO IN: color bars (EBU)
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS

∗ mark; B SIDE mount

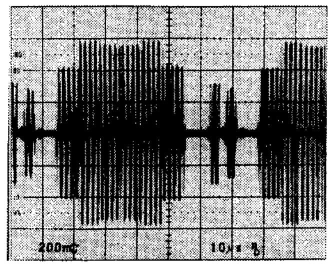
① TP605 (H-2∗) STOP (E-E) mode



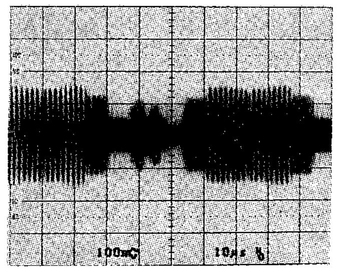
TP605 (H-2∗) PB mode



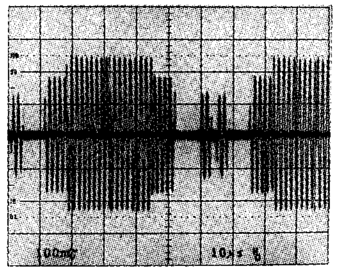
② TP607 (F-3∗) STOP (E-E) mode



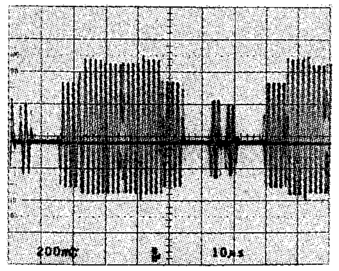
TP607 (F-3∗) PB mode



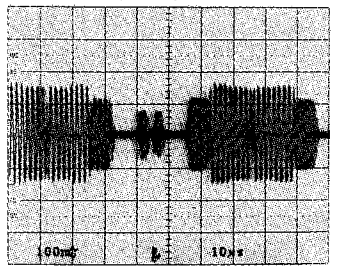
③ TP603 (H-3∗) STOP (E-E) mode



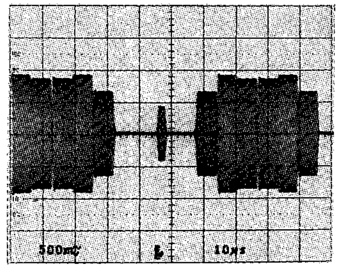
④ TP601 (G-3∗) STOP (E-E) mode



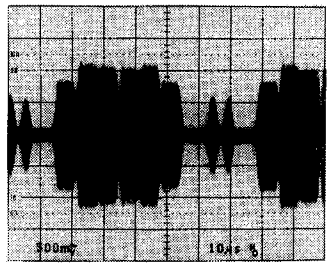
TP601 (G-3∗) PB mode



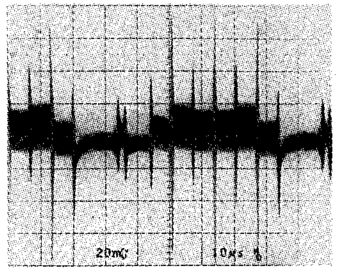
⑤ TP501 (C-3∗) STOP (E-E) mode
TP502 (A-4∗) STOP (E-E) mode



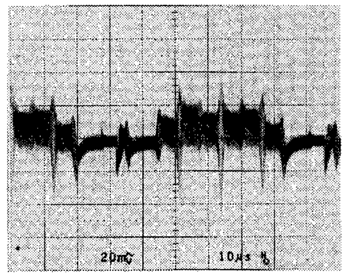
TP501 (C-3∗) PB mode
TP502 (A-4∗) PB mode



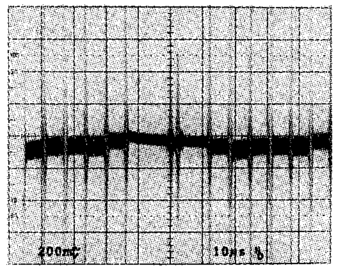
⑥ TP801 (D-1∗) STOP (E-E) mode



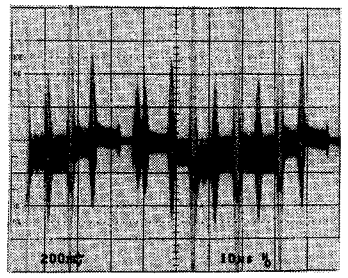
TP801 (D-1∗) PB mode



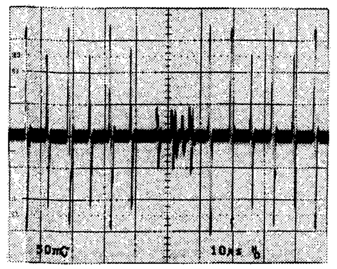
⑦ TP820 (A-1∗) STOP (E-E) mode



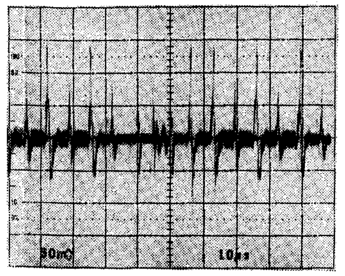
TP820 (A-1∗) PB mode



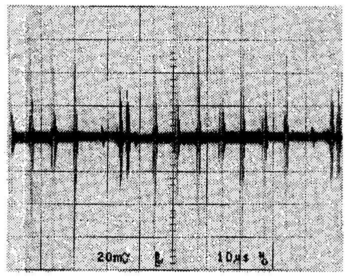
⑧ TP850 (C-1∗) STOP (E-E) mode



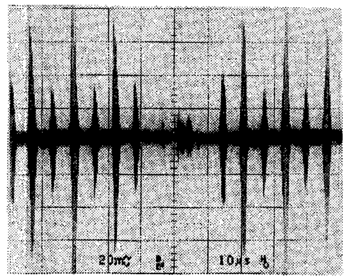
TP850 (C-1∗) PB mode



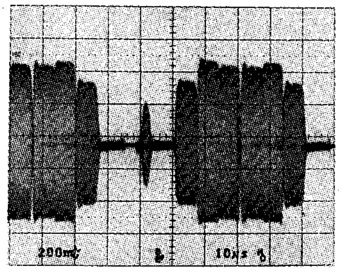
⑨ TP870 (C-1∗) STOP (E-E) mode



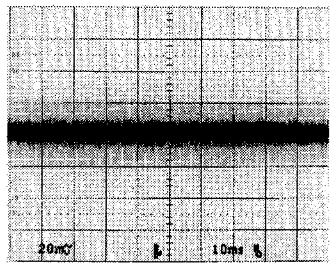
TP870 (C-1∗) PB mode



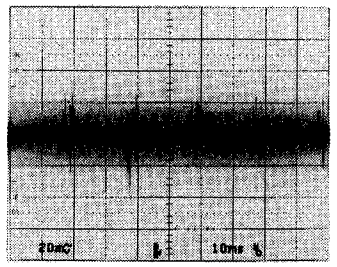
⑩ TP890 (E-1∗) PB mode



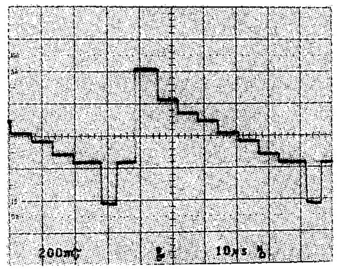
⑪ TP606 (F-1∗) STOP (E-E) mode



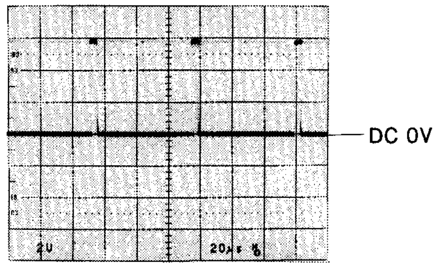
TP606 (F-1∗) PB mode



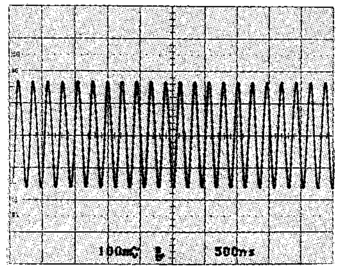
⑫ CN212 pin 18 (H-2)
STOP (E-E) mode



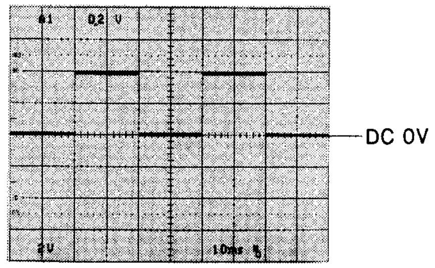
⑬ IC604 pin 4 (F-1)



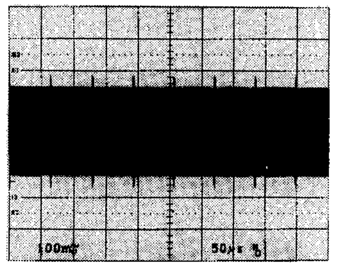
⑭ TP602 (H-2∗)



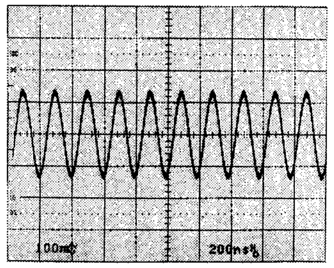
⑮ TP610 (E-3∗) REC/PB mode



⑯ TP608 (F-3∗)



TP608 (F-3∗) (fsc part)

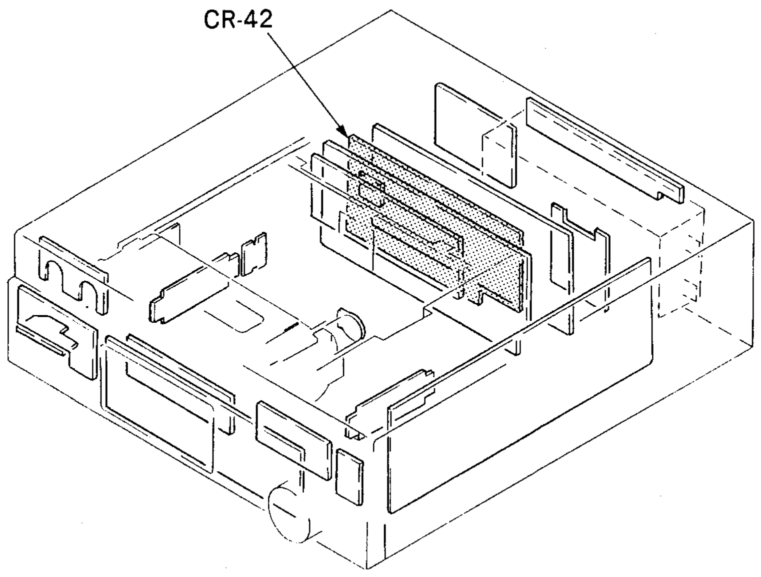


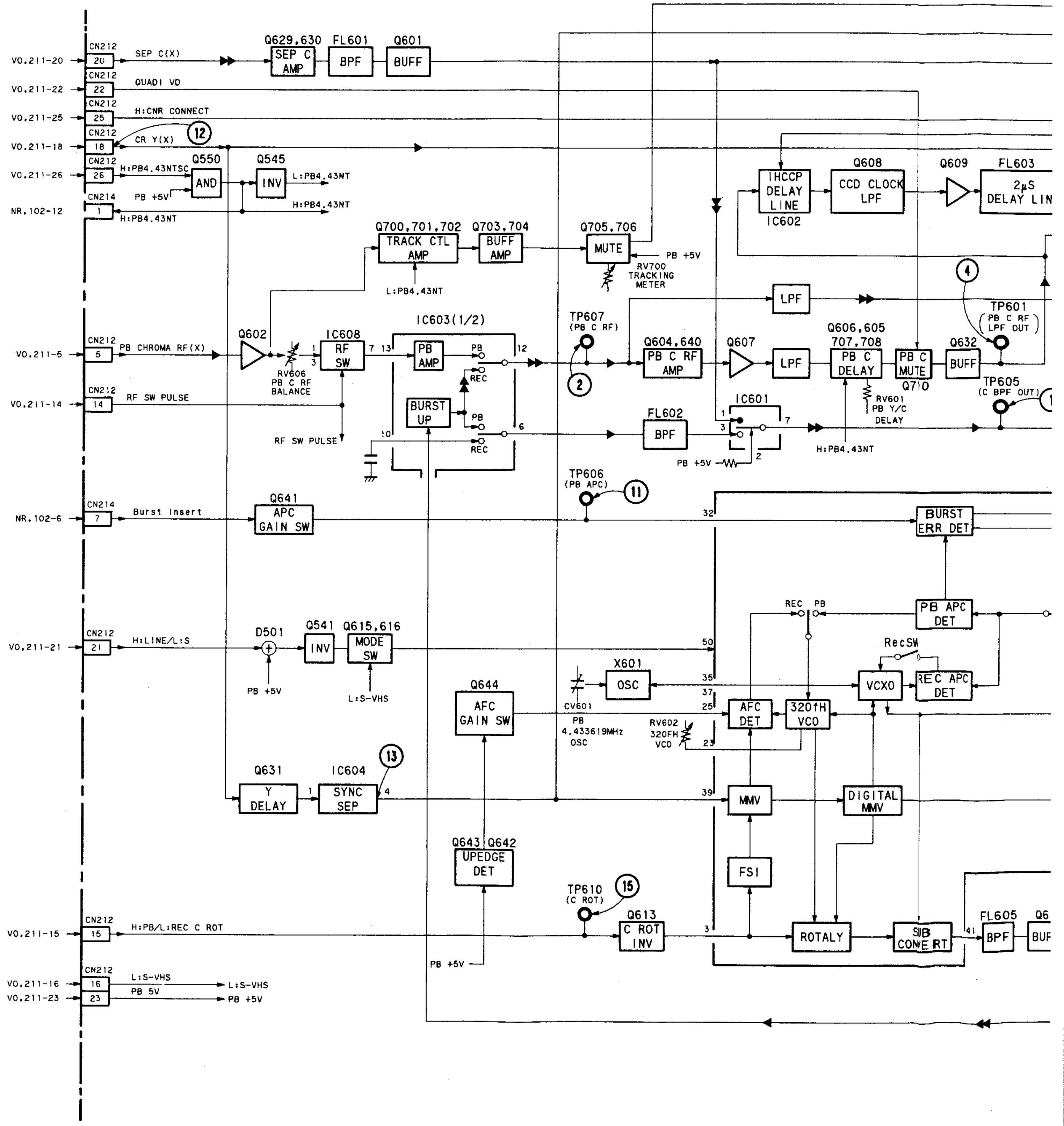
Measurement Condition

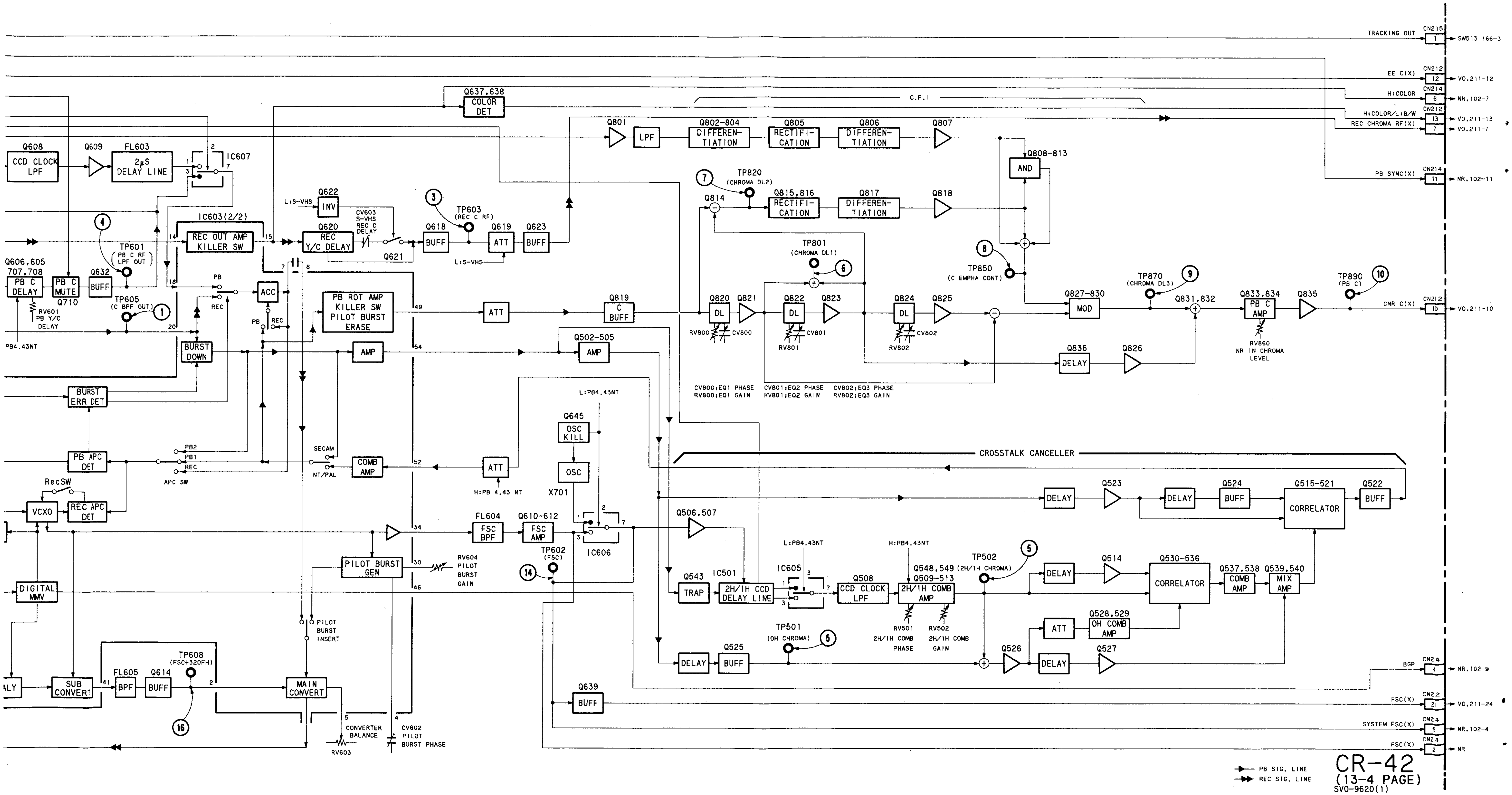
S-VIDEO IN: color bars (EBU)
STOP (E-E) mode: S-VHS
REC mode: S-VHS
PB mode: KRV-45HPS

∗ mark; B SIDE mount

CHROMA PROCESS



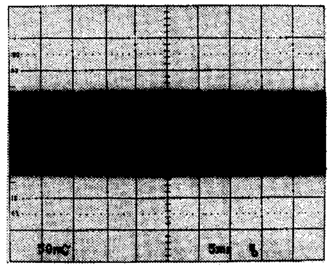

VO.211-20
CN212 20
SEP C(X)
Q629,630
SEP C AMP
FL601
BPF
Q601
BUFF
VO.211-22
CN212 22
QUADI VD
VO.211-25
CN212 25
H:CNR CONNECT
VO.211-18
CN212 18
CR Y(X)
12
VO.211-26
CN212 26
H:PB4.43NTSC
Q550
AND
Q545
INV
L:PB4.43NT
NR.102-12
CN214 1
PB +5V
H:PB4.43NT
H:PB4.43NT
Q700,701,702
TRACK CTL AMP
Q703,704
BUFF AMP
L:PB4.43NT
Q705,706
MUTE
PB +5V
RV700 TRACKING METER
IHCCP DELAY LINE
IC602
Q608
CCD CLOCK LPF
Q609
FL603
2μS DELAY LIN
4
LPF
TP601 (PB C RF LPF OUT)
VO.211-5
CN212 5
PB CHROMA RF(X)
Q602
RV606 PB C RF BALANCE
IC608
RF SW
IC603(1/2)
PB AMP
PB
REC
BURST UP
PB
REC
TP607 (PB C RF)
2
Q604,640
PB C RF AMP
Q607
LPF
Q606,605 707,708
PB C DELAY
PB C MUTE
Q710
Q632
BUFF
TP605 (C BPF OUT)
RV601 PB Y/C DELAY
H:PB4.43NT
VO.211-14
CN212 14
RF SW PULSE
RF SW PULSE
FL602
BPF
IC601
PB +5V
TP606 (PB APC)
11
NR.102-6
CN214 7
Burst Insert
Q641
APC GAIN SW
32
BURST ERR DET
REC PB
PB APC DET
VO.211-21
CN212 21
H:LINE/L:S
D501
PB +5V
Q541
INV
Q615,616
MODE SW
L:S-VHS
50
RecSW
X601
OSC
35
37
VCXO
REC APC DET
Q644
AFC GAIN SW
CV601
PB 4.433619MHz OSC
RV602 320FH VCO
25
23
AFC DET
320fH VCO
Q631
Y DELAY
IC604
SYNC SEP
13
39
MMV
DIGITAL MMV
Q643 Q642
UPEDGE DET
FSI
TP610 (C ROT)
15
Q613
C ROT INV
VO.211-15
CN212 15
H:PB/L:REC C ROT
PB +5V
3
ROTALY
SIB CONVERT
41
FL605
BPF
BUF
Q6
VO.211-16
VO.211-23
CN212 16
CN212 23
L:S-VHS
PB 5V
L:S-VHS
PB +5V


TRACKING OUT
CN215
SW513 166-3
EE C(X)
CN212
VO.211-12
H:COLOR
CN214
NR.102-7
H:COLOR/L:B/W
VO.211-13
REC CHROMA RF(X)
VO.211-7
PB SYNC(X)
NR.102-11
CNR C(X)
VO.211-10
BGP
NR.102-9
FSC(X)
VO.211-24
SYSTEM FSC(X)
NR.102-4
NR
Q637,638
COLOR DET
C.P.I
Q801
LPF
Q802-804
DIFFEREN-TIATION
Q805
RECTIFI-CATION
Q806
DIFFEREN-TIATION
Q807
Q808-813
AND
Q608
CCD CLOCK LPF
Q609
FL603
2μS DELAY LINE
IC607
IC603(2/2)
REC OUT AMP KILLER SW
L:S-VHS
Q622
INV
Q620
REC Y/C DELAY
CV603 S-VHS REC C DELAY
Q621
TP603 (REC C RF)
Q618
BUFF
Q619
ATT
Q623
BUFF
TP820 (CHROMA DL2)
Q814
Q815,816
RECTIFI-CATION
Q817
DIFFEREN-TIATION
Q818
TP601 (PB C RF LPF OUT)
Q606,605 707,708
PB C DELAY
PB C MUTE
Q710
Q632
BUFF
RV601 PB Y/C DELAY
TP605 (C BPF OUT)
PB4.43NT
PB
REC
ACC
PB ROT AMP KILLER SW PILOT BURST ERASE
ATT
Q819
C BUFF
TP801 (CHROMA DL1)
Q820
DL
Q821
Q822
DL
Q823
Q824
DL
Q825
RV800
CV800
RV801
CV801
RV802
CV802
TP850 (C EMPHA CONT)
Q827-830
MOD
TP870 (CHROMA DL3)
Q831,832
Q833,834
PB C AMP
Q835
TP890 (PB C)
RV860 NR IN CHROMA LEVEL
BURST DOWN
AMP
Q502-505
AMP
Q836
DELAY
Q826
CV800:EQ1 PHASE
RV800:EQ1 GAIN
CV801:EQ2 PHASE
RV801:EQ2 GAIN
CV802:EQ3 PHASE
RV802:EQ3 GAIN
BURST ERR DET
L:PB4.43NT
Q645
OSC KILL
PB2
PB1
REC
SECAM
NT/PAL
PB APC DET
APC SW
COMB AMP
ATT
H:PB 4.43 NT
OSC
X701
CROSSTALK CANCELLER
RecSW
VCXO
REC APC DET
FL604
FSC BPF
Q610-612
FSC AMP
IC606
Q506,507
DELAY
Q523
DELAY
Q524
BUFF
Q515-521
CORRELATOR
Q522
BUFF
PILOT BURST GEN
RV604 PILOT BURST GAIN
TP602 (FSC)
L:PB4.43NT
H:PB4.43NT
IC605
Q543
TRAP
IC501
2H/1H CCD DELAY LINE
Q508
CCD CLOCK LPF
Q548,549
Q509-513
2H/1H COMB AMP
TP502 (2H/1H CHROMA)
DELAY
Q514
Q530-536
CORRELATOR
Q537,538
COMB AMP
Q539,540
MIX AMP
DIGITAL MMV
PILOT BURST INSERT
RV501 2H/1H COMB PHASE
RV502 2H/1H COMB GAIN
Q528,529
ATT
OH COMB AMP
TP501 (OH CHROMA)
Q525
DELAY
BUFF
Q526
DELAY
Q527
TP608 (FSC+320FH)
FL605
Q614
SUB CONVERT
BPF
BUFF
MAIN CONVERT
ALY
Q639
BUFF
CONVERTER BALANCE
RV603
CV602 PILOT BURST PHASE
① ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑭ ⑯
PB SIG. LINE
REC SIG. LINE

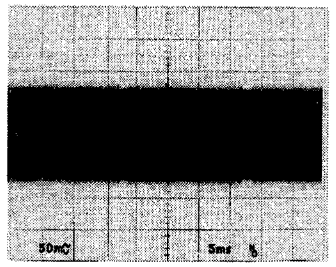
CR-42
(13-4 PAGE)
SVO-9620(1)
SVP-9020(1)

VIDEO & AFM HEAD AMP

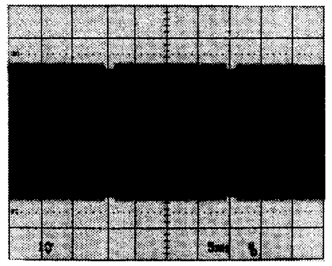
① CN804 pin 1 (C-1) REC mode



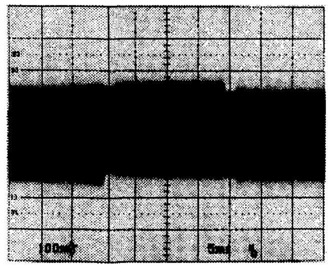
② CN804 pin 2 (C-1) PB mode (S)
CN804 pin 5 (C-1) (TRIG)



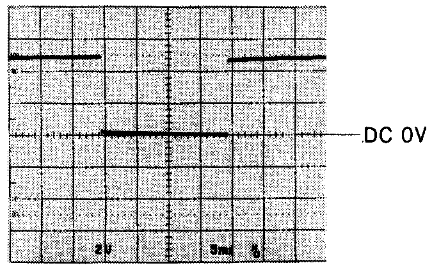
③ CN804 pin 3 (C-1) REC mode
CN804 pin 5 (C-1) (TRIG)



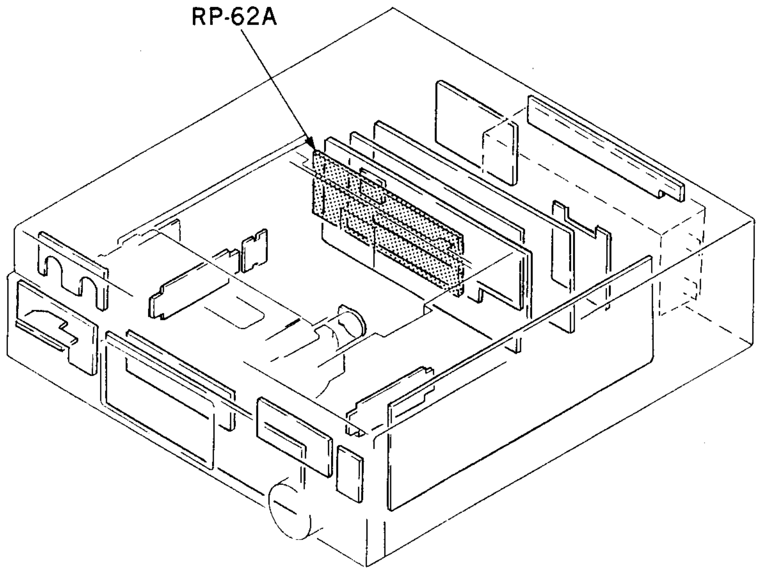
④ CN804 pin 4 (C-1) PB mode (N)
CN804 pin 5 (C-1) (TRIG)

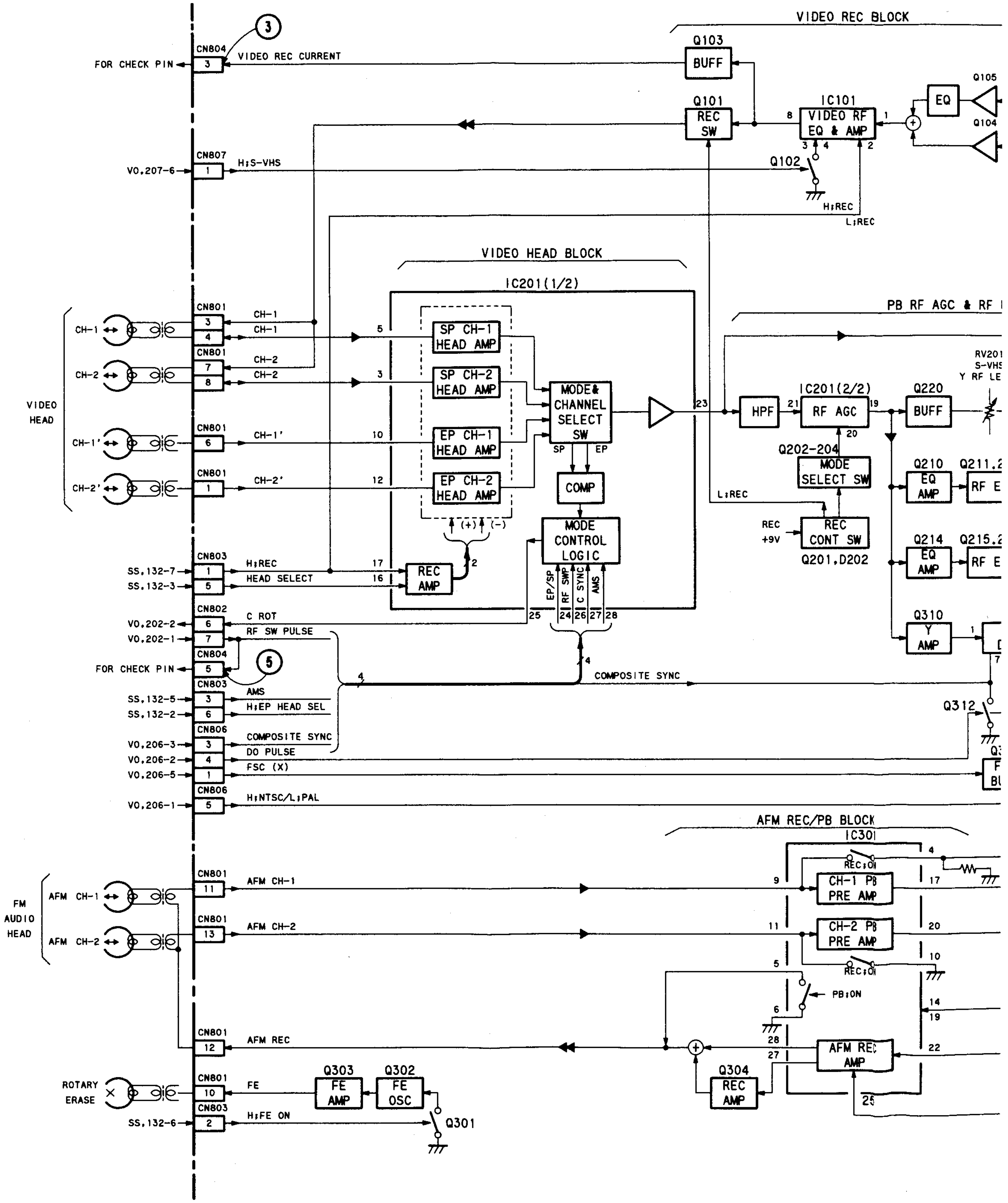


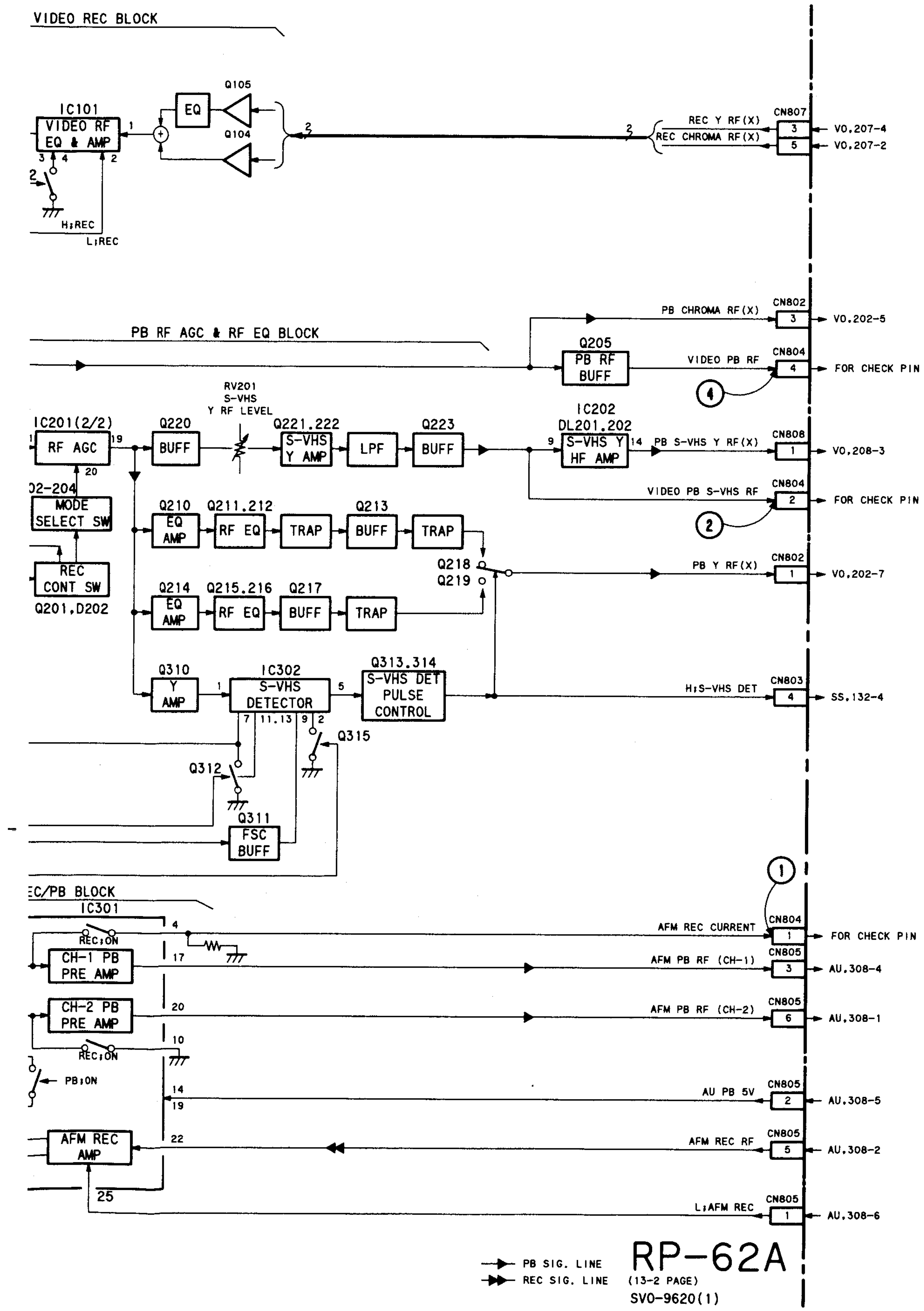
⑤ CN804 pin 5 (C-1) REC/PB mode



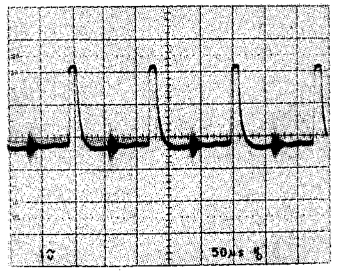
Measurement Condition
S-VIDEO IN: color bars (EBU)
REC mode: S-VHS
PB mode (S): KRV-45HPS
PB mode (N): KRV-45PS



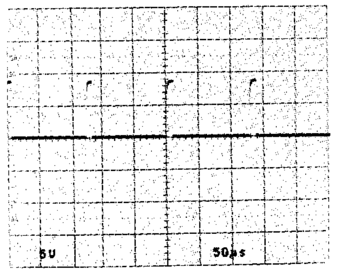

VIDEO REC BLOCK
FOR CHECK PIN
CN804
VIDEO REC CURRENT
Q103
BUFF
Q101
REC SW
IC101
VIDEO RF EQ & AMP
EQ
Q105
Q104
CN807
H:S-VHS
VO,207-6
Q102
H:REC
L:REC
VIDEO HEAD BLOCK
IC201(1/2)
CH-1
CH-2
CH-1'
CH-2'
VIDEO HEAD
CN801
SP CH-1 HEAD AMP
SP CH-2 HEAD AMP
EP CH-1 HEAD AMP
EP CH-2 HEAD AMP
MODE& CHANNEL SELECT SW
SP
EP
COMP
MODE CONTROL LOGIC
EP/SP
RF SWP
C SYNC
AMS
REC AMP
PB RF AGC & RF
HPF
IC201(2/2)
RF AGC
Q220
BUFF
RV201
S-VHS
Y RF LE
Q202-204
MODE SELECT SW
REC +9V
REC CONT SW
Q201,D202
L:REC
Q210
EQ AMP
Q211,2
RF E
Q214
EQ AMP
Q215,2
Q310
Y AMP
Q312
CN803
SS,132-7
SS,132-3
H:REC
HEAD SELECT
CN802
VO,202-2
VO,202-1
C ROT
RF SW PULSE
FOR CHECK PIN
CN804
COMPOSITE SYNC
SS,132-5
SS,132-2
AMS
H:EP HEAD SEL
CN806
VO,206-3
VO,206-2
VO,206-5
VO,206-1
COMPOSITE SYNC
DO PULSE
FSC (X)
H:NTSC/L:PAL
AFM REC/PB BLOCK
IC301
FM AUDIO HEAD
AFM CH-1
AFM CH-2
REC:ON
CH-1 PB PRE AMP
CH-2 PB PRE AMP
PB:ON
AFM REC
AFM REC AMP
Q304
REC AMP
ROTARY ERASE
FE
Q303
FE AMP
Q302
FE OSC
H:FE ON
SS,132-6
Q301


VIDEO REC BLOCK
IC101
VIDEO RF EQ & AMP
EQ
Q105
Q104
H:REC
L:REC
REC Y RF(X)
REC CHROMA RF(X)
CN807
VO.207-4
VO.207-2
PB RF AGC & RF EQ BLOCK
PB CHROMA RF(X)
CN802
VO.202-5
Q205
PB RF BUFF
VIDEO PB RF
CN804
FOR CHECK PIN
④
RV201
S-VHS
Y RF LEVEL
IC201(2/2)
RF AGC
Q220
BUFF
Q221,222
S-VHS Y AMP
LPF
Q223
BUFF
IC202
DL201,202
S-VHS Y HF AMP
PB S-VHS Y RF(X)
CN808
VO.208-3
VIDEO PB S-VHS RF
CN804
FOR CHECK PIN
②
02-204
MODE SELECT SW
REC CONT SW
Q201,D202
Q210
EQ AMP
Q211,212
RF EQ
TRAP
Q213
BUFF
TRAP
Q218
Q219
PB Y RF(X)
CN802
VO.202-7
Q214
EQ AMP
Q215,216
RF EQ
Q217
BUFF
TRAP
Q310
Y AMP
IC302
S-VHS DETECTOR
Q313,314
S-VHS DET PULSE CONTROL
H:S-VHS DET
CN803
SS.132-4
Q315
Q312
Q311
FSC BUFF
①
EC/PB BLOCK
IC301
REC:ON
CH-1 PB PRE AMP
CH-2 PB PRE AMP
REC:ON
PB:ON
AFM REC AMP
AFM REC CURRENT
CN804
FOR CHECK PIN
AFM PB RF (CH-1)
CN805
AU.308-4
AFM PB RF (CH-2)
CN805
AU.308-1
AU PB 5V
CN805
AU.308-5
AFM REC RF
CN805
AU.308-2
L:AFM REC
CN805
AU.308-6
PB SIG. LINE
REC SIG. LINE
RP-62A
(13-2 PAGE)
SVO-9620(1)

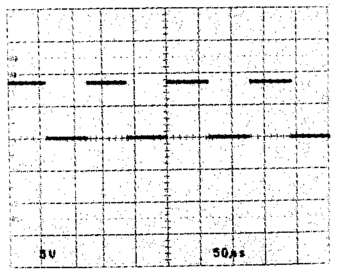
① TP106 (H-2) PB mode



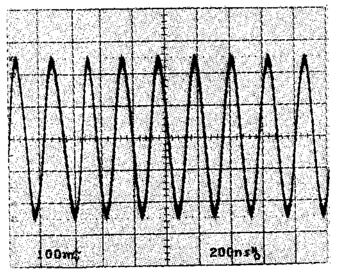
② TP102 (H-1) PB mode



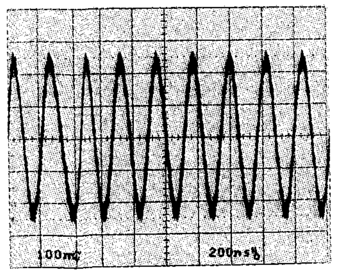
③ TP103 (H-2) PB mode



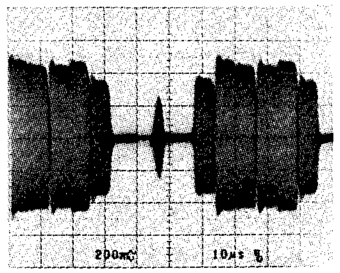
④ TP101 (J-1) PB mode



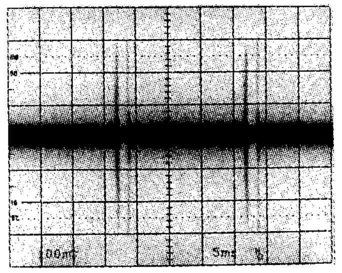
⑤ TP104 (G-1) PB mode



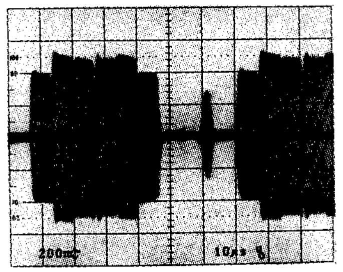
⑥ TP105 (G-1) PB mode



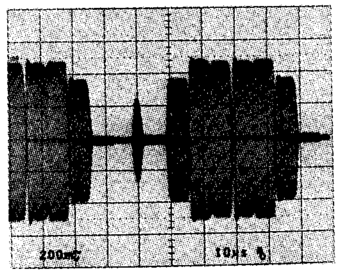
⑦ TP201 (D-4) PB mode



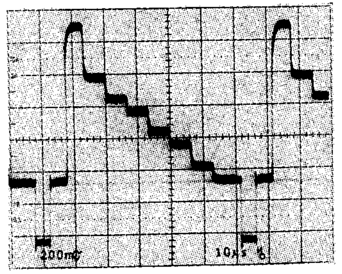
⑧ TP202 (D-4) PB mode



⑨ *CN301-2 (C-4) PB mode (dnr- ON)
CN302-4 (B-4) PB mode



⑩ *CN301-4 (C-4) PB mode (dnr- ON)
CN302-2 (B-4) PB mode

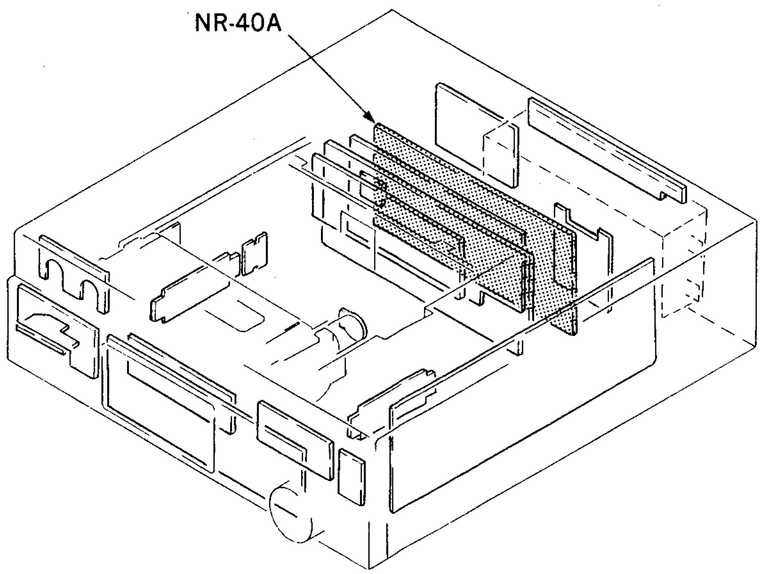


Measurement Condition

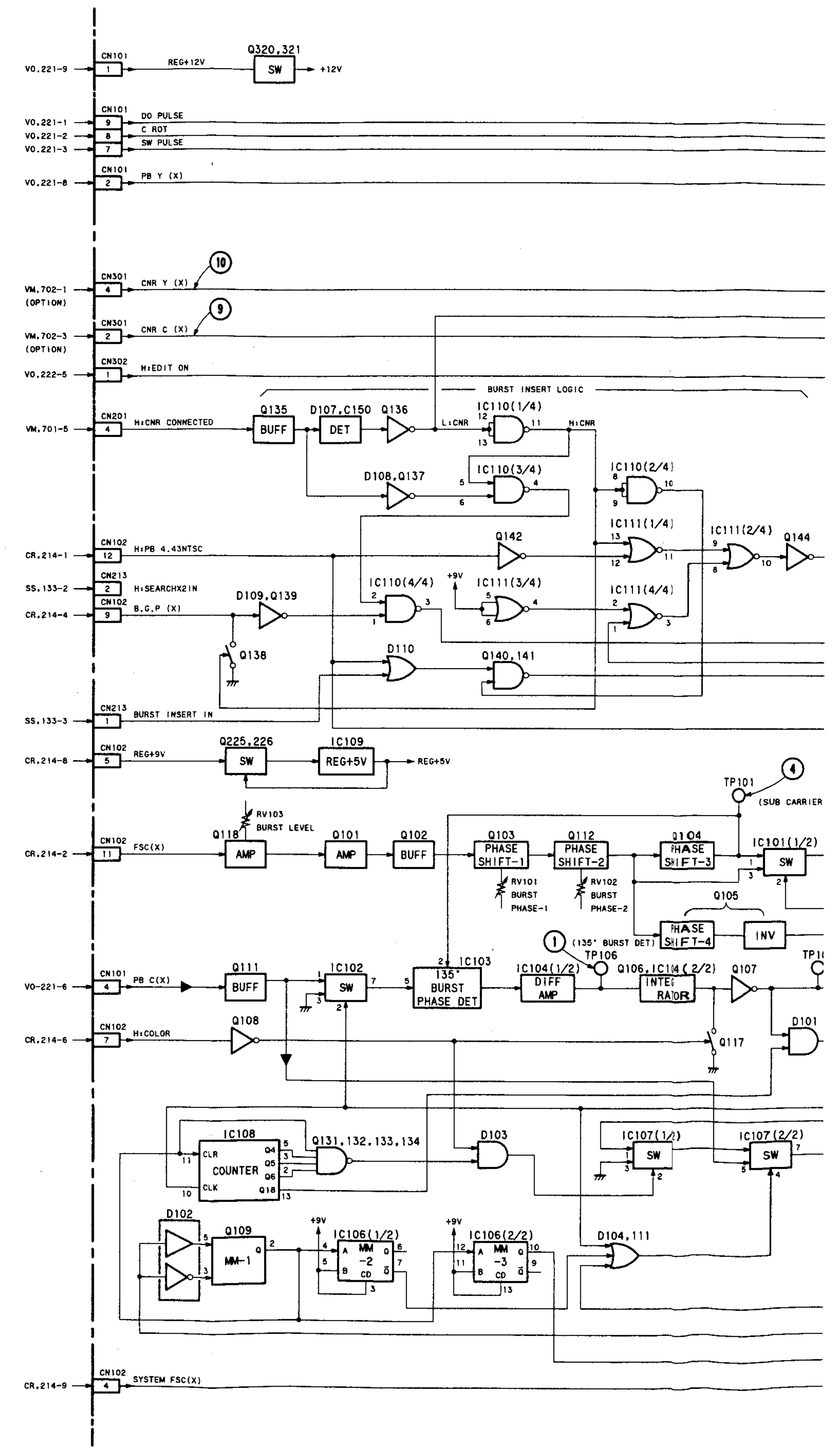
PB mode: KRV-45HPS

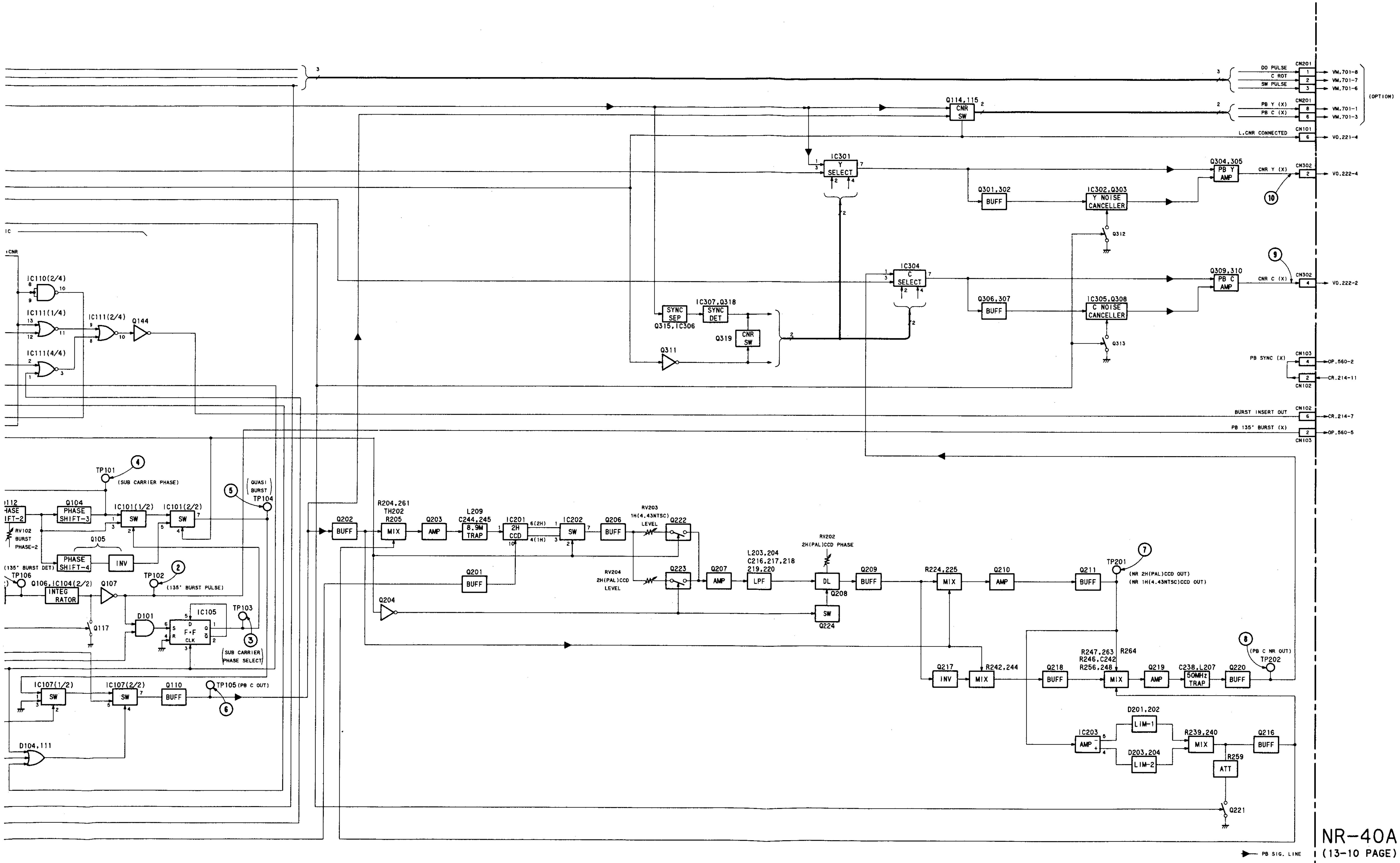
*dnr- on (Refer to Menu Items.)

SVBK-150 board is mounted.

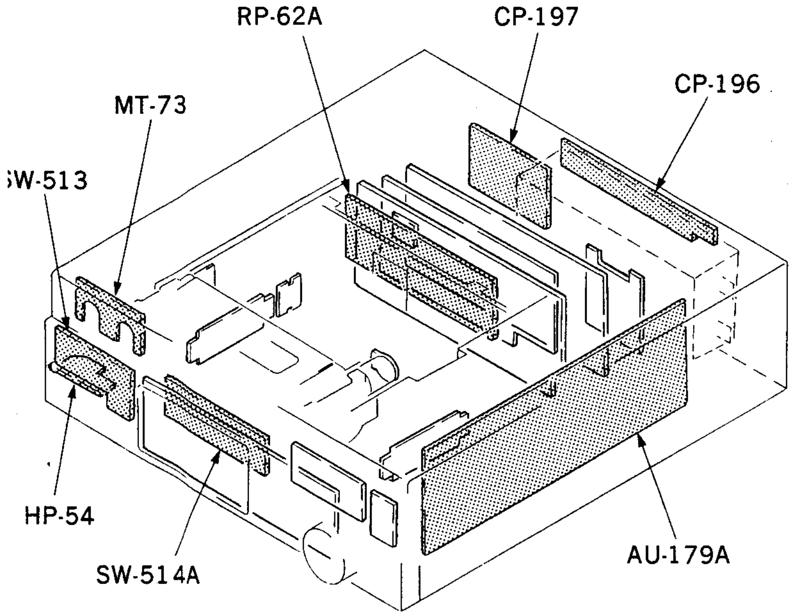


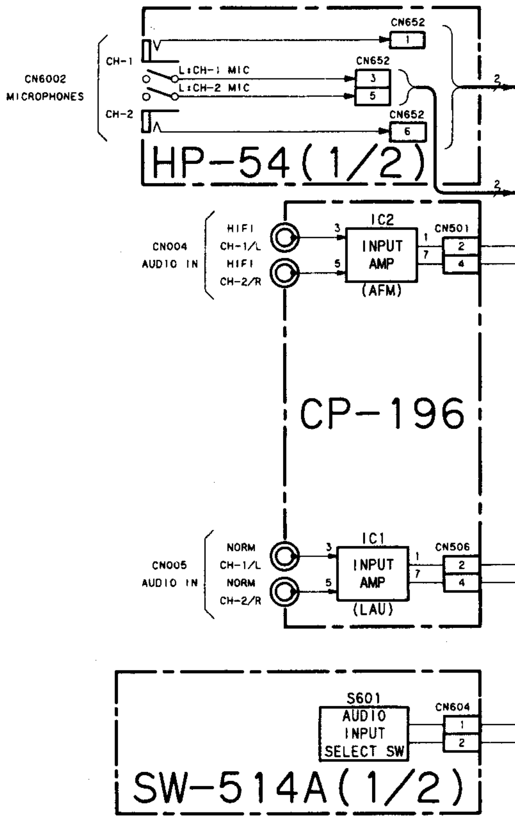
ANALOG NOISE REDUCER


VO.221-9
CN101
REG+12V
Q320,321
SW
+12V
VO.221-1
VO.221-2
VO.221-3
DO PULSE
C ROT
SW PULSE
VO.221-8
PB Y (X)
VM.702-1 (OPTION)
CN301
CNR Y (X)
⑩
VM.702-3 (OPTION)
CNR C (X)
⑨
VO.222-5
CN302
H:EDIT ON
VM.701-5
CN201
H:CNR CONNECTED
BURST INSERT LOGIC
Q135
BUFF
D107,C150
DET
Q136
L:CNR
H:CNR
IC110(1/4)
IC110(3/4)
IC110(2/4)
D108,Q137
CR.214-1
CN102
H:PB 4.43NTSC
Q142
IC111(1/4)
IC111(2/4)
Q144
SS.133-2
CN213
H:SEARCHX2IN
CR.214-4
B.G.P (X)
D109,Q139
IC110(4/4)
+9V
IC111(3/4)
IC111(4/4)
Q138
D110
Q140,141
SS.133-3
BURST INSERT IN
CR.214-8
REG+9V
Q225,226
SW
IC109
REG+5V
REG+5V
TP101
④
(SUB CARRIER
RV103
BURST LEVEL
CR.214-2
FSC(X)
Q118
AMP
Q101
AMP
Q102
BUFF
Q103
PHASE SHIFT-1
Q112
PHASE SHIFT-2
Q104
PHASE SHIFT-3
IC101(1/2)
SW
RV101
BURST PHASE-1
RV102
BURST PHASE-2
Q105
PHASE SHIFT-4
INV
①
(135° BURST DET)
TP106
VO-221-6
PB C(X)
Q111
BUFF
IC102
SW
IC103
135° BURST PHASE DET
IC104(1/2)
DIFF AMP
Q106,IC104(2/2)
INTEGRATOR
Q107
CR.214-6
H:COLOR
Q108
Q117
D101
IC108
CLR
COUNTER
CLK
Q131,132,133,134
D103
IC107(1/2)
SW
IC107(2/2)
SW
D102
Q109
MM-1
IC106(1/2)
MM -2
IC106(2/2)
MM -3
D104,111
CR.214-9
SYSTEM FSC(X)

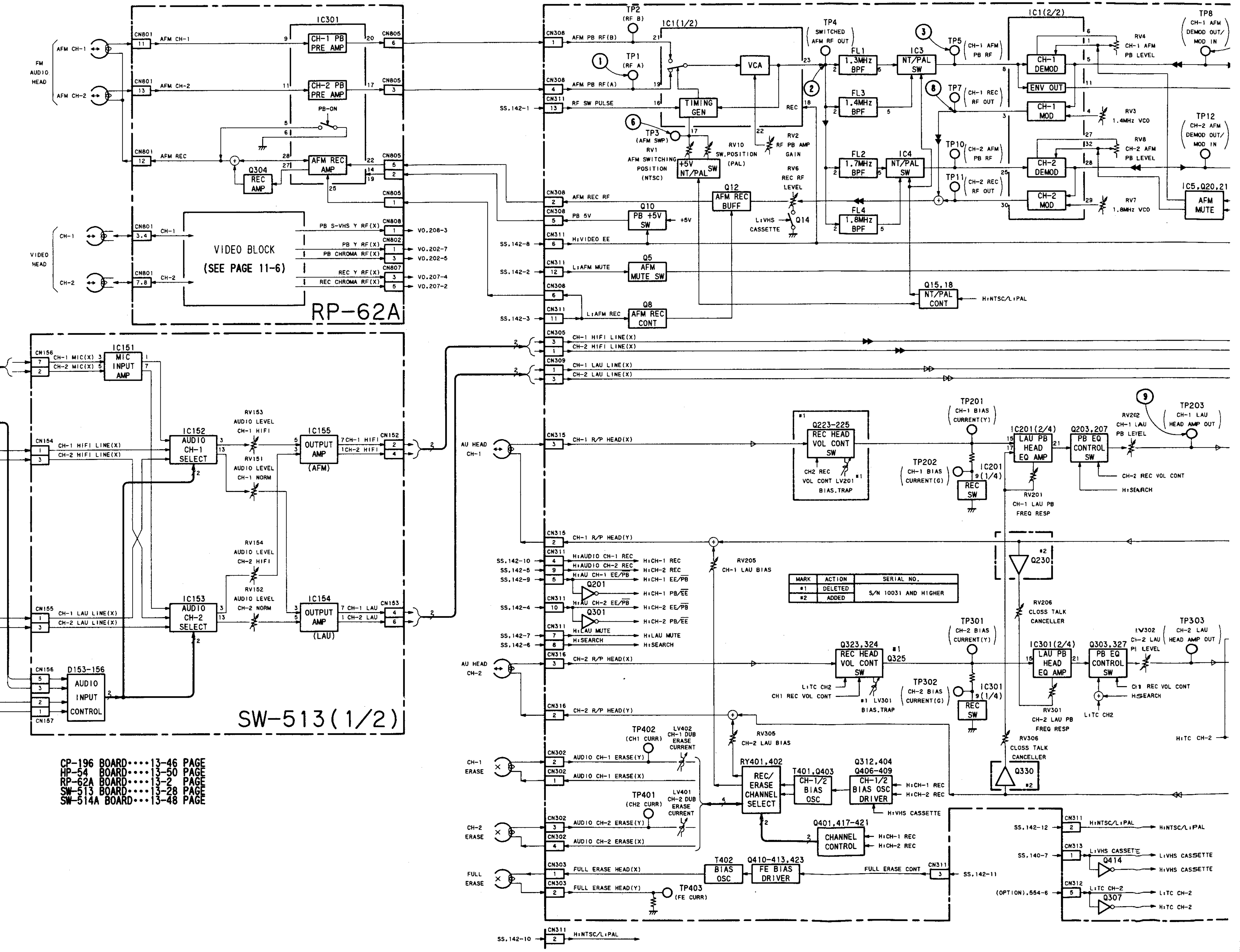

DO PULSE
C ROT
SW PULSE
CN201
VM,701-8
VM,701-7
VM,701-6
PB Y (X)
PB C (X)
VM,701-1
VM,701-3
(OPTION)
L,CNR CONNECTED
CN101
VO.221-4
Q114,115
CNR SW
IC301
Y SELECT
Q301,302
BUFF
IC302,Q303
Y NOISE CANCELLER
Q304,305
PB Y AMP
CNR Y (X)
CN302
VO.222-4
⑩
Q312
⑨
IC304
C SELECT
Q306,307
BUFF
IC305,Q308
C NOISE CANCELLER
Q309,310
PB C AMP
CNR C (X)
CN302
VO.222-2
Q313
SYNC SEP
Q315,IC306
IC307,Q318
SYNC DET
Q319
CNR SW
Q311
PB SYNC (X)
CN103
OP.560-2
CN102
CR.214-11
BURST INSERT OUT
CN102
CR.214-7
PB 135° BURST (X)
CN103
OP.560-5
IC
CNR
IC110(2/4)
IC111(1/4)
IC111(2/4)
IC111(4/4)
Q144
TP101
④
(SUB CARRIER PHASE)
Q112
PHASE SHIFT-2
RV102 BURST PHASE-2
Q104
PHASE SHIFT-3
IC101(1/2)
SW
IC101(2/2)
SW
⑤
(QUASI BURST)
TP104
Q105
PHASE SHIFT-4
INV
(135° BURST DET)
TP106
Q106,IC104(2/2)
INTEG RATOR
Q107
TP102
②
(135° BURST PULSE)
Q117
D101
IC105
F·F
CLK
TP103
③
(SUB CARRIER PHASE SELECT)
IC107(1/2)
SW
IC107(2/2)
SW
Q110
BUFF
TP105 (PB C OUT)
⑥
D104,111
Q202
BUFF
R204,261
TH202
R205
MIX
Q203
AMP
L209
C244,245
8.9M TRAP
IC201
2H CCD
6(2H)
4(1H)
IC202
SW
Q206
BUFF
RV203
1H(4.43NTSC) LEVEL
Q222
Q201
BUFF
Q204
RV204
2H(PAL)CCD LEVEL
Q223
Q207
AMP
L203,204
C216,217,218
219,220
LPF
RV202
2H(PAL)CCD PHASE
DL
Q208
SW
Q224
Q209
BUFF
R224,225
MIX
Q210
AMP
Q211
BUFF
TP201
⑦
(NR 2H(PAL)CCD OUT)
(NR 1H(4.43NTSC)CCD OUT)
Q217
INV
MIX
R242,244
Q218
BUFF
R247,263
R246,C242
R256,248
R264
MIX
Q219
AMP
C238,L207
50MHz TRAP
Q220
BUFF
⑧
(PB C NR OUT)
TP202
D201,202
LIM-1
IC203
AMP
D203,204
LIM-2
R239,240
MIX
Q216
BUFF
R259
ATT
Q221
PB SIG. LINE

NR-40A
(13-10 PAGE)
SVO-9620(1)
SVP-9020(1)

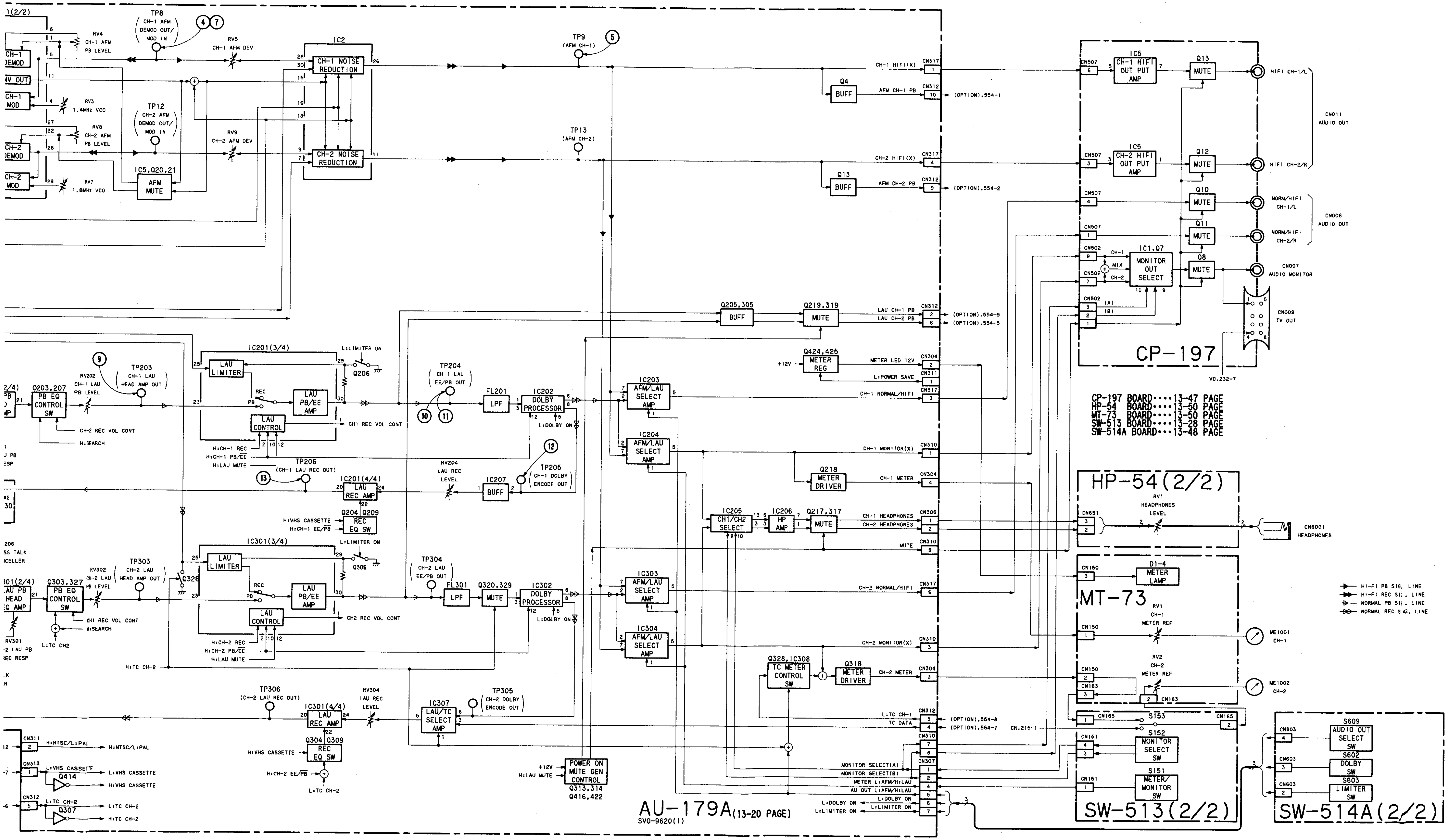

RP-62A
CP-197
CP-196
MT-73
SW-513
HP-54
SW-514A
AU-179A



AFM PROCESS/NORMAL AUDIO PROCESS

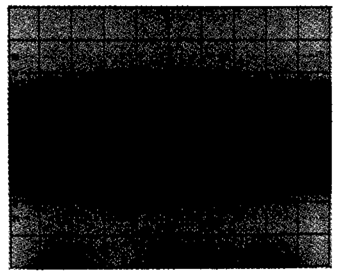

FM AUDIO HEAD
AFM CH-1
AFM CH-2
VIDEO HEAD
CH-1
CH-2
CN801
CN805
IC301
CH-1 PB PRE AMP
CH-2 PB PRE AMP
PB-ON
AFM REC AMP
Q304 REC AMP
AFM REC
VIDEO BLOCK (SEE PAGE 11-6)
CN808
CN802
CN807
PB S-VHS Y RF(X)
PB Y RF(X)
PB CHROMA RF(X)
REC Y RF(X)
REC CHROMA RF(X)
VO.208-3
VO.202-7
VO.202-5
VO.207-4
VO.207-2
RP-62A
CN6002 MICROPHONES
L:CH-1 MIC
L:CH-2 MIC
CN652
HP-54(1/2)
CN004 AUDIO IN
HIFI CH-1/L
HIFI CH-2/R
IC2 INPUT AMP (AFM)
CN501
CP-196
CN005 AUDIO IN
NORM CH-1/L
NORM CH-2/R
IC1 INPUT AMP (LAU)
CN506
SW-514A(1/2)
S601 AUDIO INPUT SELECT SW
CN604
CN156
IC151 MIC INPUT AMP
CH-1 MIC(X)
CH-2 MIC(X)
CN154
CH-1 HIFI LINE(X)
CH-2 HIFI LINE(X)
IC152 AUDIO CH-1 SELECT
RV153 AUDIO LEVEL CH-1 HIFI
RV151 AUDIO LEVEL CH-1 NORM
IC155 OUTPUT AMP (AFM)
CN152
CH-1 HIFI
CH-2 HIFI
CN155
CH-1 LAU LINE(X)
CH-2 LAU LINE(X)
IC153 AUDIO CH-2 SELECT
RV154 AUDIO LEVEL CH-2 HIFI
RV152 AUDIO LEVEL CH-2 NORM
IC154 OUTPUT AMP (LAU)
CN153
CH-1 LAU
CH-2 LAU
CN157
D153-156 AUDIO INPUT CONTROL
SW-513(1/2)
CN308
CN311
AFM PB RF(B)
AFM PB RF(A)
RF SW PULSE
SS.142-1
TP2 (RF B)
TP1 (RF A)
IC1(1/2)
VCA
TIMING GEN
TP3 (AFM SWP)
RV1 AFM SWITCHING POSITION (NTSC)
+5V NT/PAL SW
RV10 SW.POSITION (PAL)
RV2 RF PB AMP GAIN
TP4 SWITCHED AFM RF OUT
FL1 1.3MHz BPF
FL3 1.4MHz BPF
FL2 1.7MHz BPF
FL4 1.8MHz BPF
IC3 NT/PAL SW
IC4 NT/PAL SW
TP5 CH-1 AFM PB RF
TP7 CH-1 REC RF OUT
TP10 CH-2 AFM PB RF
TP11 CH-2 REC RF OUT
IC1(2/2)
CH-1 DEMOD
ENV OUT
CH-1 MOD
CH-2 DEMOD
CH-2 MOD
RV4 CH-1 AFM PB LEVEL
RV3 1.4MHz VCO
RV8 CH-2 AFM PB LEVEL
RV7 1.8MHz VCO
TP8 CH-1 AFM DEMOD OUT/ MOD IN
TP12 CH-2 AFM DEMOD OUT/ MOD IN
IC5,Q20,21 AFM MUTE
AFM REC RF
PB 5V
Q10 PB +5V SW
Q12 AFM REC BUFF
RV6 REC RF LEVEL
L:VHS CASSETTE
Q14
H:VIDEO EE
SS.142-8
L:AFM MUTE
SS.142-2
Q5 AFM MUTE SW
Q15,18 NT/PAL CONT
H:NTSC/L:PAL
L:AFM REC
SS.142-3
Q8 AFM REC CONT
CN305
CN309
CH-1 HIFI LINE(X)
CH-2 HIFI LINE(X)
CH-1 LAU LINE(X)
CH-2 LAU LINE(X)
AU HEAD CH-1
CN315
CH-1 R/P HEAD(X)
CH-1 R/P HEAD(Y)
Q223-225 REC HEAD VOL CONT SW
CH2 REC VOL CONT LV201 BIAS.TRAP
TP201 CH-1 BIAS CURRENT(Y)
TP202 CH-1 BIAS CURRENT(G)
IC201 9(1/4)
REC SW
IC201(2/4) LAU PB HEAD EQ AMP
RV201 CH-1 LAU PB FREQ RESP
Q203,207 PB EQ CONTROL SW
RV202 CH-1 LAU PB LEVEL
TP203 CH-1 LAU HEAD AMP OUT
CH-2 REC VOL CONT
H:SEARCH
H:AUDIO CH-1 REC
H:AUDIO CH-2 REC
H:AU CH-1 EE/PB
H:AU CH-2 EE/PB
H:LAU MUTE
H:SEARCH
SS.142-10
SS.142-5
SS.142-9
SS.142-4
SS.142-7
SS.142-6
Q201
Q301
H:CH-1 REC
H:CH-2 REC
H:CH-1 EE/PB
H:CH-1 PB/EE
H:CH-2 EE/PB
H:CH-2 PB/EE
H:LAU MUTE
RV205 CH-1 LAU BIAS
MARK ACTION SERIAL NO.
#1 DELETED S/N 10031 AND HIGHER
#2 ADDED
Q230
RV206 CLOSS TALK CANCELLER
AU HEAD CH-2
CN316
CH-2 R/P HEAD(X)
CH-2 R/P HEAD(Y)
Q323,324 REC HEAD VOL CONT SW
Q325
L:TC CH2
CH1 REC VOL CONT
LV301 BIAS.TRAP
TP301 CH-2 BIAS CURRENT(Y)
TP302 CH-2 BIAS CURRENT(G)
IC301 9(1/4)
IC301(2/4) LAU PB HEAD EQ AMP
RV301 CH-2 LAU PB FREQ RESP
Q303,327 PB EQ CONTROL SW
LV302 CH-2 LAU PB LEVEL
TP303 CH-2 LAU HEAD AMP OUT
CH1 REC VOL CONT
H:SEARCH
L:TC CH2
H:TC CH-2
RV305 CH-2 LAU BIAS
RV306 CLOSS TALK CANCELLER
Q330
CH-1 ERASE
CH-2 ERASE
FULL ERASE
CN302
CN303
AUDIO CH-1 ERASE(Y)
AUDIO CH-1 ERASE(X)
AUDIO CH-2 ERASE(Y)
AUDIO CH-2 ERASE(X)
TP402 (CH1 CURR)
LV402 CH-1 DUB ERASE CURRENT
TP401 (CH2 CURR)
LV401 CH-2 DUB ERASE CURRENT
RY401,402 REC/ERASE CHANNEL SELECT
T401,Q403 CH-1/2 BIAS OSC
Q312,404 Q406-409 CH-1/2 BIAS OSC DRIVER
H:CH-1 REC
H:CH-2 REC
H:VHS CASSETTE
Q401,417-421 CHANNEL CONTROL
FULL ERASE HEAD(X)
FULL ERASE HEAD(Y)
TP403 (FE CURR)
T402 BIAS OSC
Q410-413,423 FE BIAS DRIVER
FULL ERASE CONT
SS.142-11
SS.142-12
SS.140-7
(OPTION),554-6
CN313
CN312
H:NTSC/L:PAL
L:VHS CASSETTE
Q414
H:VHS CASSETTE
L:TC CH-2
Q307
H:TC CH-2
SS.142-10
H:NTSC/L:PAL

CP-196 BOARD····13-46 PAGE
HP-54 BOARD····13-50 PAGE
RP-62A BOARD····13-2 PAGE
SW-513 BOARD····13-28 PAGE
SW-514A BOARD····13-48 PAGE

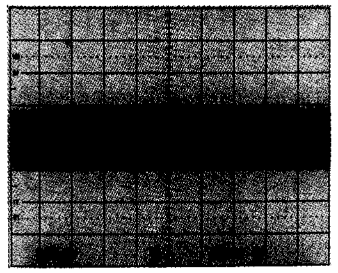

1(2/2)
TP8 CH-1 AFM DEMOD OUT/ MOD IN
④⑦
RV4 CH-1 AFM PB LEVEL
RV5 CH-1 AFM DEV
IC2
CH-1 NOISE REDUCTION
TP9 (AFM CH-1)
⑤
CH-1 DEMOD
NV OUT
CH-1 MOD
RV3 1.4MHz VCO
TP12 CH-2 AFM DEMOD OUT/ MOD IN
RV8 CH-2 AFM PB LEVEL
RV9 CH-2 AFM DEV
CH-2 NOISE REDUCTION
TP13 (AFM CH-2)
CH-2 DEMOD
CH-2 MOD
RV7 1.8MHz VCO
IC5,Q20,21 AFM MUTE
CH-1 HIFI(X)
CN317
Q4 BUFF
AFM CH-1 PB
CN312
(OPTION).554-1
CH-2 HIFI(X)
Q13 BUFF
AFM CH-2 PB
(OPTION).554-2
Q205,305 BUFF
Q219,319 MUTE
LAU CH-1 PB
LAU CH-2 PB
(OPTION).554-9
(OPTION).554-5
Q424,425 METER REG
+12V
METER LED 12V
CN304
L:POWER SAVE
CN311
CH-1 NORMAL/HIFI
IC201(3/4)
LAU LIMITER
L:LIMITER ON
Q206
TP203 CH-1 LAU HEAD AMP OUT
⑨
RV202 CH-1 LAU PB LEVEL
Q203,207 PB EQ CONTROL SW
CH-2 REC VOL CONT
H:SEARCH
REC PB
LAU PB/EE AMP
LAU CONTROL
CH1 REC VOL CONT
H:CH-1 REC
H:CH-1 PB/EE
H:LAU MUTE
TP204 CH-1 LAU EE/PB OUT
⑩ ⑪
FL201 LPF
IC202 DOLBY PROCESSOR
L:DOLBY ON
IC203 AFM/LAU SELECT AMP
IC204 AFM/LAU SELECT AMP
CH-1 MONITOR(X)
CN310
Q218 METER DRIVER
CH-1 METER
TP206 (CH-1 LAU REC OUT)
⑬
IC201(4/4) LAU REC AMP
RV204 LAU REC LEVEL
IC207 BUFF
⑫
TP205 CH-1 DOLBY ENCODE OUT
Q204,Q209 REC EQ SW
H:VHS CASSETTE
H:CH-1 EE/PB
IC205 CH1/CH2 SELECT
IC206 HP AMP
Q217,317 MUTE
CH-1 HEADPHONES
CH-2 HEADPHONES
CN306
MUTE
IC301(3/4)
LAU LIMITER
Q306
Q326
TP303 CH-2 LAU HEAD AMP OUT
RV302 CH-2 LAU PB LEVEL
Q303,327 PB EQ CONTROL SW
301(2/4) LAU PB HEAD EQ AMP
CH1 REC VOL CONT
H:SEARCH
L:TC CH2
RV301 CH-2 LAU PB EQ RESP
LAU PB/EE AMP
LAU CONTROL
CH2 REC VOL CONT
H:CH-2 REC
H:CH-2 PB/EE
H:LAU MUTE
H:TC CH-2
TP304 CH-2 LAU EE/PB OUT
FL301 LPF
Q320,329 MUTE
IC302 DOLBY PROCESSOR
IC303 AFM/LAU SELECT AMP
CH-2 NORMAL/HIFI
IC304 AFM/LAU SELECT AMP
CH-2 MONITOR(X)
Q328,IC308 TC METER CONTROL SW
Q318 METER DRIVER
CH-2 METER
TP306 (CH-2 LAU REC OUT)
IC301(4/4) LAU REC AMP
RV304 LAU REC LEVEL
IC307 LAU/TC SELECT AMP
TP305 CH-2 DOLBY ENCODE OUT
Q304,Q309 REC EQ SW
H:VHS CASSETTE
H:CH-2 EE/PB
L:TC CH-2
L:TC CH-1
TC DATA
(OPTION).554-8
(OPTION).554-7
CR.215-1
CN311 H:NTSC/L:PAL
CN313 L:VHS CASSETTE Q414 H:VHS CASSETTE
CN312 L:TC CH-2 Q307 H:TC CH-2
+12V
H:LAU MUTE
POWER ON MUTE GEN CONTROL Q313,314 Q416,422
MONITOR SELECT(A)
MONITOR SELECT(B)
METER L:AFM/H:LAU
AU OUT L:AFM/H:LAU
L:DOLBY ON
L:LIMITER ON
CN307
AU-179A(13-20 PAGE)
SVO-9620(1)
IC5 CH-1 HIFI OUT PUT AMP
CN507
Q13 MUTE
HIFI CH-1/L
CN011 AUDIO OUT
IC5 CH-2 HIFI OUT PUT AMP
Q12 MUTE
HIFI CH-2/R
Q10 MUTE
NORM/HIFI CH-1/L
CN006 AUDIO OUT
Q11 MUTE
NORM/HIFI CH-2/R
CN502
IC1,Q7 MONITOR OUT SELECT
CH-1 MIX CH-2
Q8 MUTE
CN007 AUDIO MONITOR
CN009 TV OUT
(A) (B)
CP-197
VO.232-7
HP-54(2/2)
CN651
RV1 HEADPHONES LEVEL
CN6001 HEADPHONES
MT-73
CN150
D1-4 METER LAMP
RV1 CH-1 METER REF
ME1001 CH-1
RV2 CH-2 METER REF
CN163
ME1002 CH-2
CN165
S153
S152 MONITOR SELECT SW
CN151
S151 METER/MONITOR SW
SW-513(2/2)
CN603
S609 AUDIO OUT SELECT SW
S602 DOLBY SW
S603 LIMITER SW
SW-514A(2/2)
HI-FI PB SIG. LINE
HI-FI REC SIG. LINE
NORMAL PB SIG. LINE
NORMAL REC SIG. LINE

CP-197 BOARD····13-47 PAGE
HP-54 BOARD····13-50 PAGE
MT-73 BOARD····13-50 PAGE
SW-513 BOARD····13-28 PAGE
SW-514A BOARD···13-48 PAGE

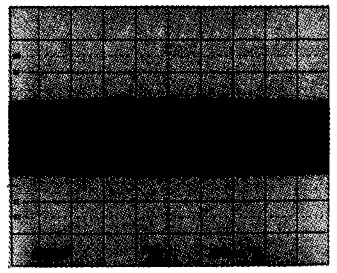
① TP1 (A-3) PB mode



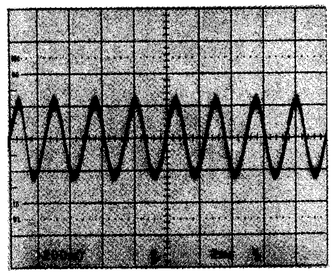
② TP4 (B-2) PB mode



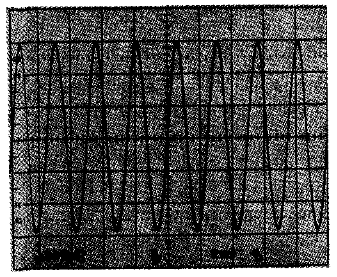
③ TP5 (A-2) PB mode



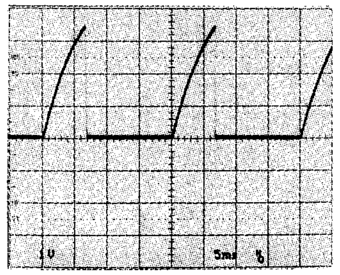
④ TP8 (D-1) PB mode



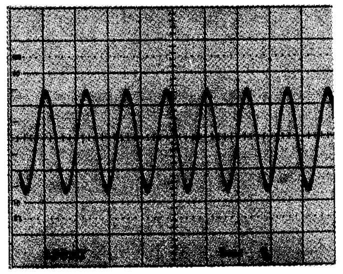
⑤ TP9 (D-1) PB mode



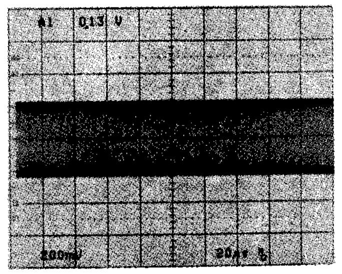
⑥ TP3 (A-3) PB mode



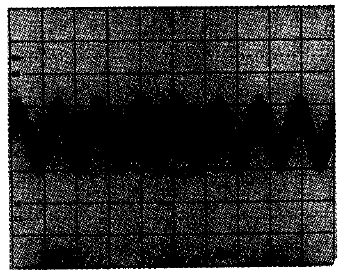
⑦ TP8 (D-1) STOP (E-E) mode



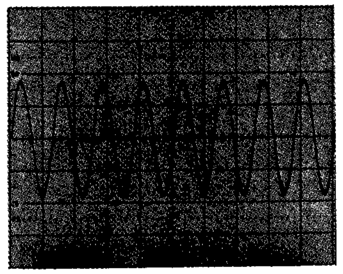
⑧ TP7 (C-3) STOP (E-E) mode



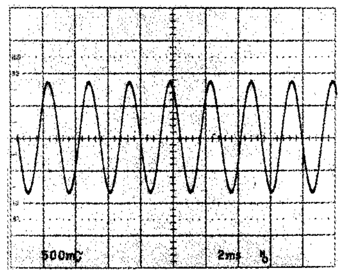
⑨ TP203 (I-4) PB mode



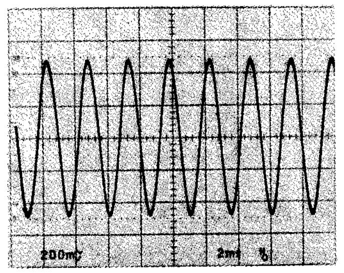
⑩ TP204 (I-3) PB mode



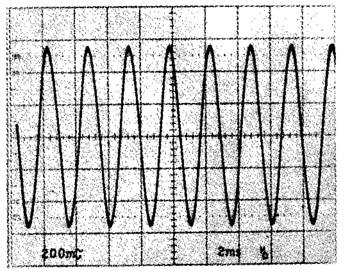
⑪ TP204 (I-3) STOP (E-E) mode



⑫ TP205 (I-2) STOP (E-E) mode



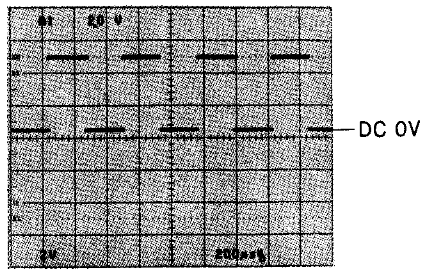
⑬ TP206 (I-3) STOP (E-E) mode



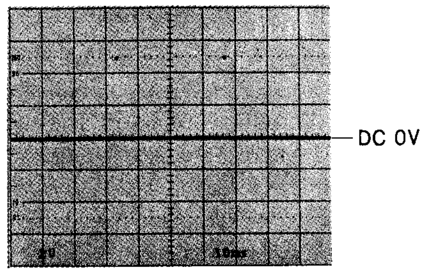
Measurement Condition
CH-1, AUDIO IN: 400Hz, −6dBu
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS (400Hz, Normal/HiFi)

SERVO & SYSTEM CONTROL

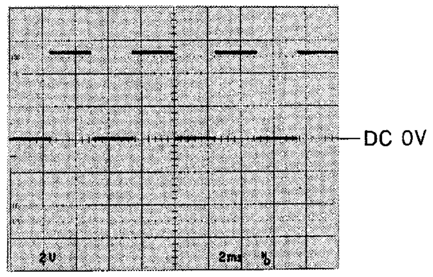
① TP103 (K-9) PB mode



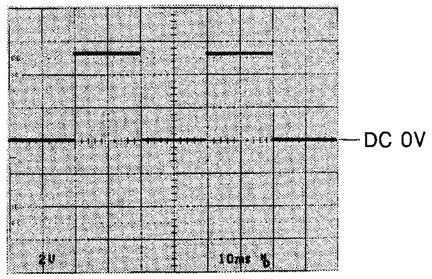
② TP104 (G-3) PB mode



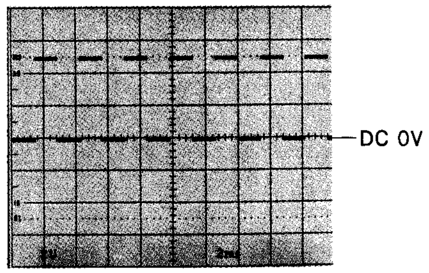
③ TP110 (G-8) PB mode



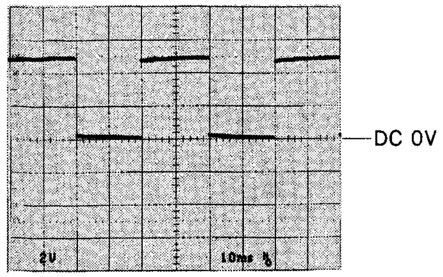
④ TP111 (L-7) PB mode



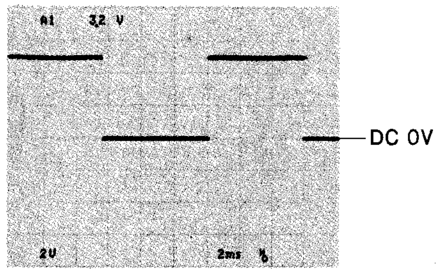
⑤ TP113 (G-3) PB mode



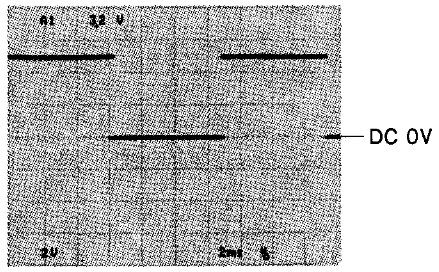
⑥ TP115 (K-4) PB mode



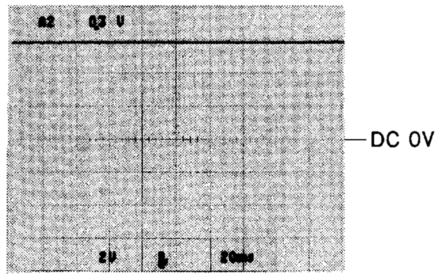
⑦ CN151-4pin (A-5/DUS-445) PB mode



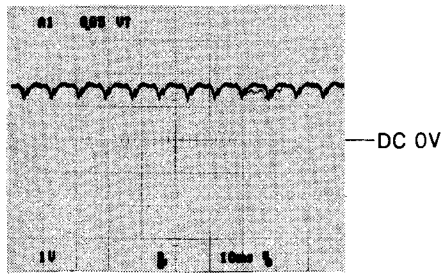
⑧ CN151-5pin (A-5/DUS-445) PB mode



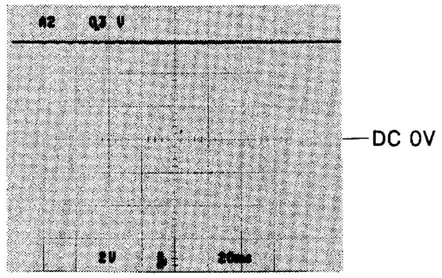
⑨ TP314 (C-2) PB mode



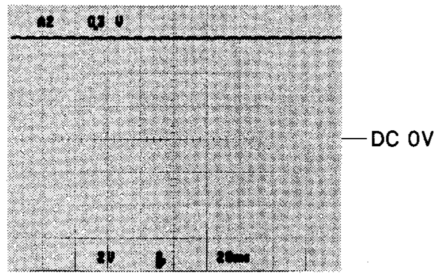
⑩ TP306 (B-2) PB mode



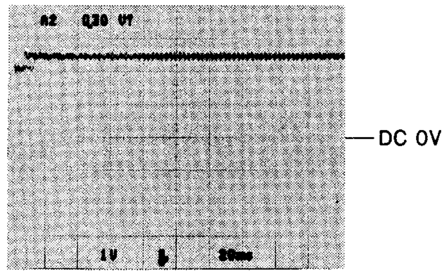
⑪ TP305 (B-3) PB mode



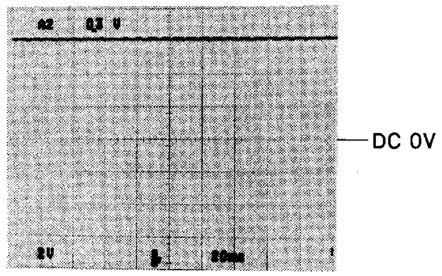
⑫ TP313 (D-3) PB mode



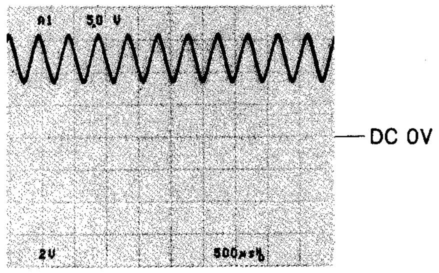
⑬ TP308 (B-3) PB mode



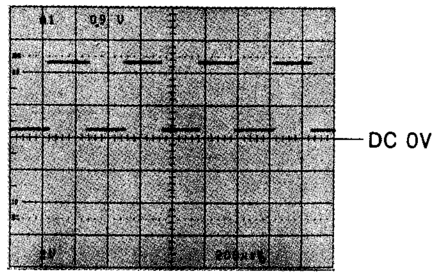
⑭ TP307 (C-2) PB mode



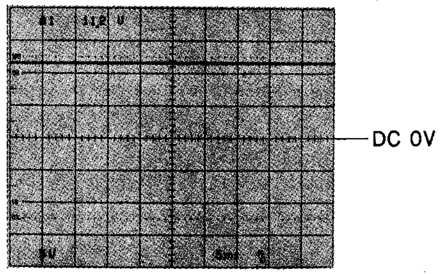
⑮ TP503 (K-9) PB mode



⑯ TP505 (K-9) PB mode



⑰ TP504 (K-9) PB mode

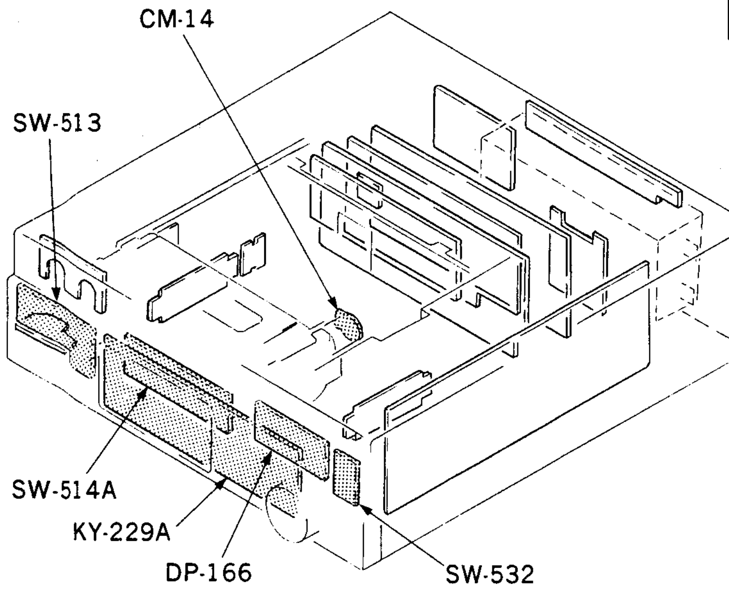


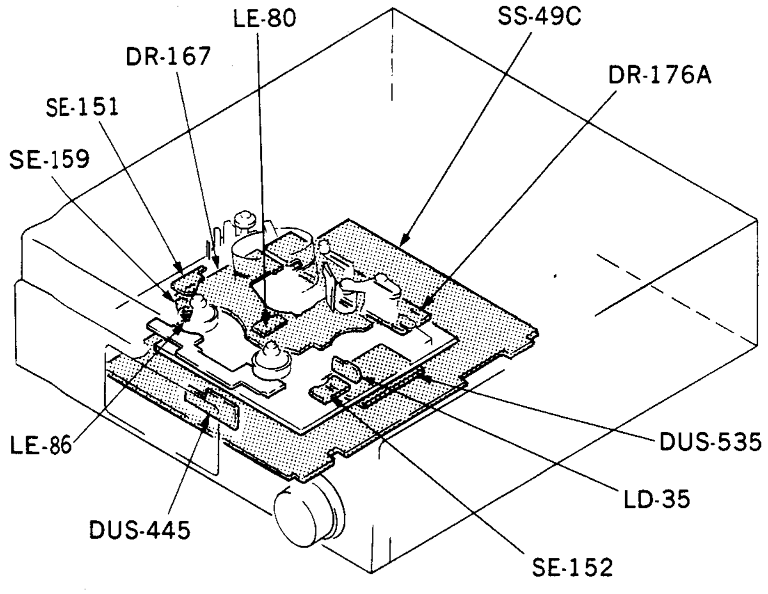
Measurement Condition

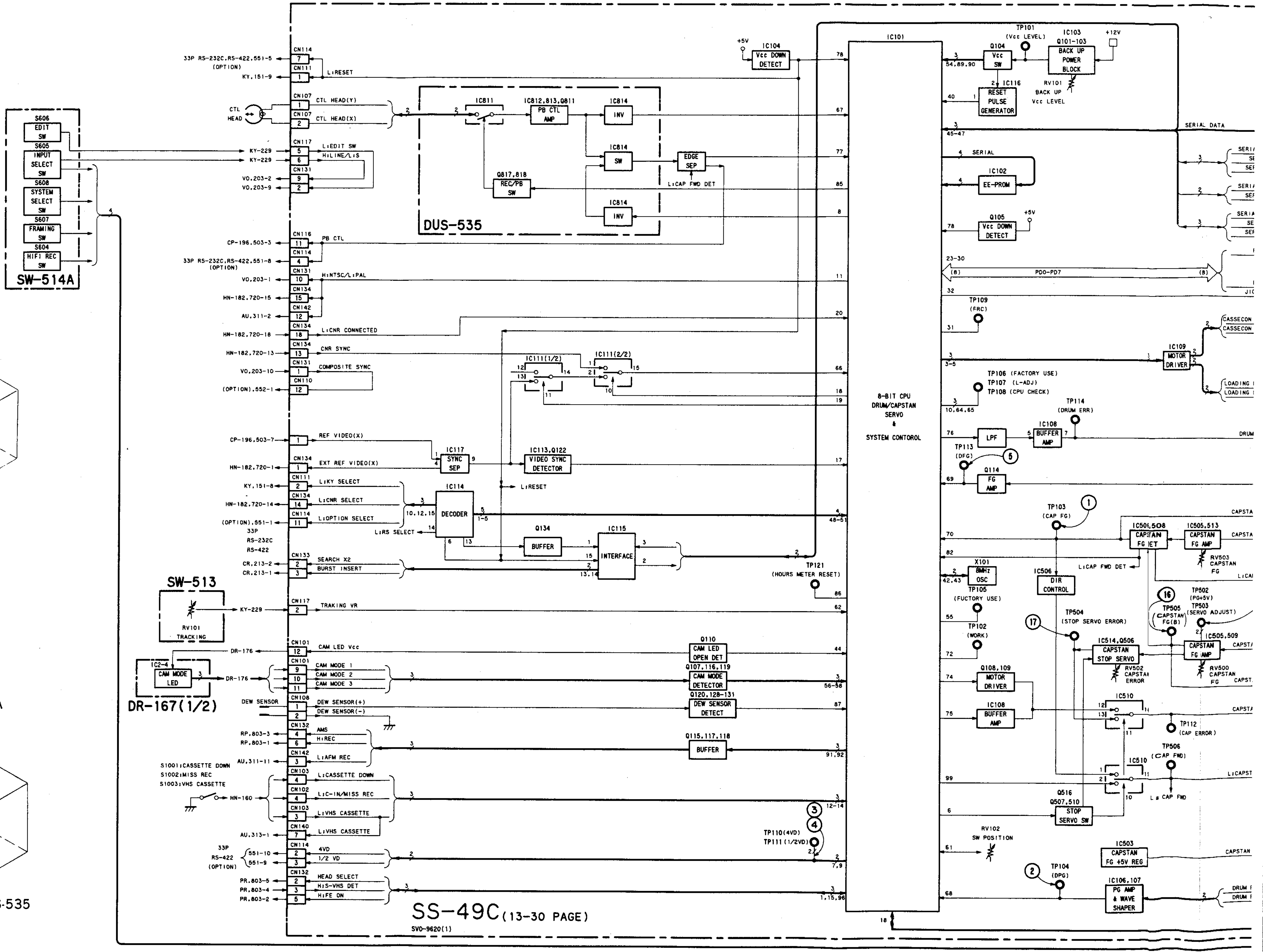
PB mode: KRV-45HPS

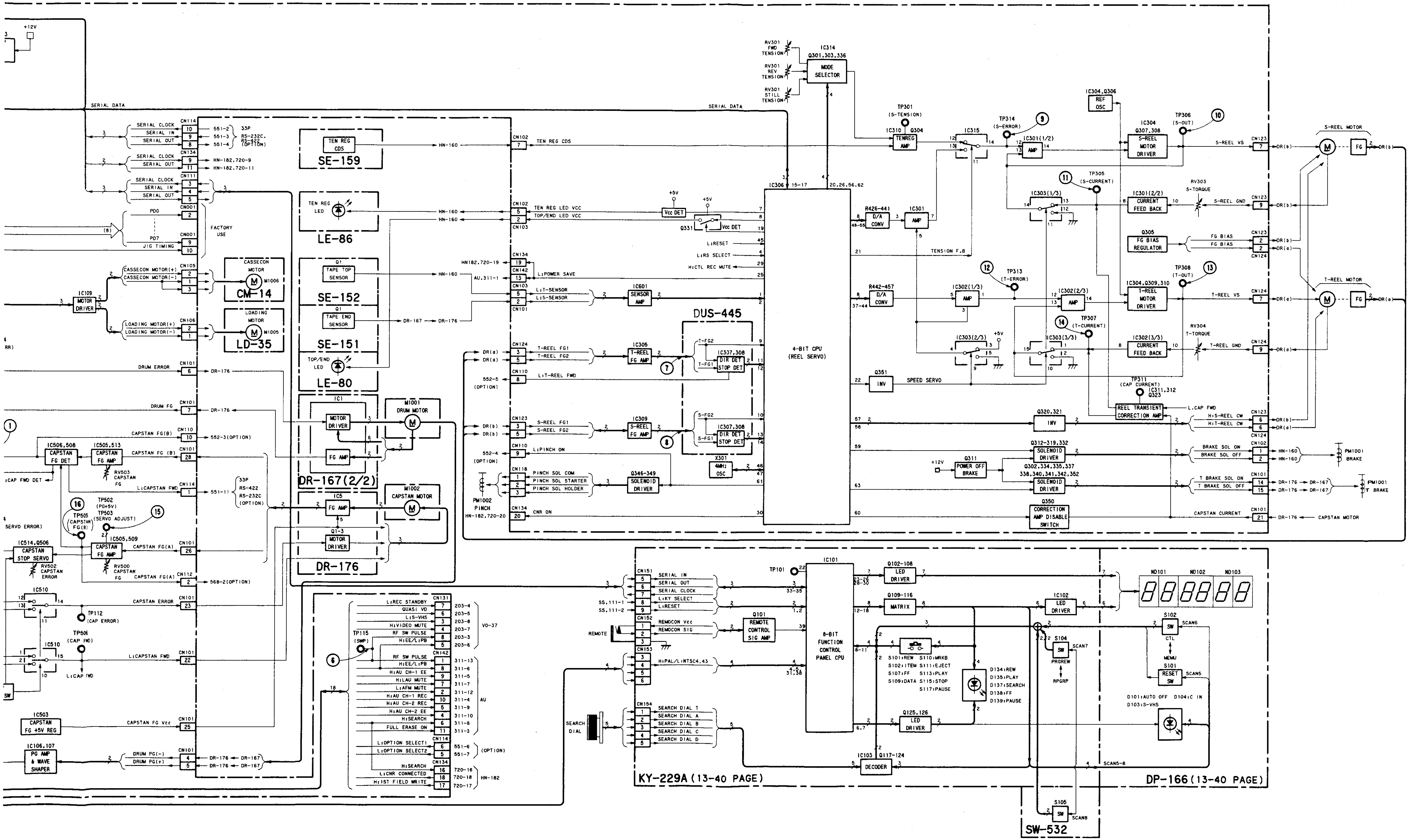
11-10

SERVO & SYSTEM CONTROL


CM-14
SW-513
SW-514A
KY-229A
DP-166
SW-532


LE-80
SS-49C
DR-167
DR-176A
SE-151
SE-159
LE-86
DUS-535
LD-35
DUS-445
SE-152


SW-514A
S606 EDIT SW
S605 INPUT SELECT SW
S608 SYSTEM SELECT SW
S607 FRAMING SW
S604 HIFI REC SW
SW-513
RV101 TRACKING
DR-167(1/2)
IC2-4 CAM MODE LED
DR-176
DEW SENSOR
S1001:CASSETTE DOWN
S1002:MISS REC
S1003:VHS CASSETTE
HN-160
CTL HEAD
33P RS-232C,RS-422,551-5 (OPTION)
KY,151-9
KY-229
VO,203-2
VO,203-9
CP-196,503-3
33P RS-232C,RS-422,551-8 (OPTION)
VO,203-1
HN-182,720-15
AU,311-2
HN-182,720-18
HN-182,720-13
VO,203-10
(OPTION),552-1
CP-196,503-7
HN-182,720-1
KY,151-8
HN-182,720-14
(OPTION),551-1
33P RS-232C RS-422
CR,213-2
CR,213-1
RP,803-3
RP,803-1
AU,311-11
AU,313-1
33P RS-422 (OPTION) 551-10 551-9
PR,803-5
PR,803-4
PR,803-2
CN114 CN111 L:RESET
CN107 CTL HEAD(Y)
CN107 CTL HEAD(X)
CN117 L:EDIT SW
H:LINE/L:S
CN131
CN116 PB CTL
CN114
CN131 H:NTSC/L:PAL
CN134
CN142
CN134 L:CNR CONNECTED
CN134 CNR SYNC
CN131 COMPOSITE SYNC
CN110
REF VIDEO(X)
CN134 EXT REF VIDEO(X)
CN111 L:KY SELECT
CN134 L:CNR SELECT
CN114 L:OPTION SELECT
L:RS SELECT
CN133 SEARCH X2
BURST INSERT
CN117 TRAKING VR
CN101 CAM LED Vcc
CN101 CAM MODE 1
CAM MODE 2
CAM MODE 3
CN108 DEW SENSOR(+)
DEW SENSOR(-)
CN132 AMS
H:REC
CN142 L:AFM REC
CN103 L:CASSETTE DOWN
CN102 L:C-IN/MISS REC
CN103 L:VHS CASSETTE
CN140 L:VHS CASSETTE
CN114 4VD
1/2 VD
CN132 HEAD SELECT
H:S-VHS DET
H:FE ON
DUS-535
IC811
IC812,813,Q811 PB CTL AMP
IC814 INV
IC814 SW
IC814 INV
Q817,818 REC/PB SW
EDGE SEP
L:CAP FWD DET
IC111(1/2)
IC111(2/2)
IC117 SYNC SEP
IC113,Q122 VIDEO SYNC DETECTOR
L:RESET
IC114 DECODER
Q134 BUFFER
IC115 INTERFACE
TP121 (HOURS METER RESET)
Q110 CAM LED OPEN DET
Q107,116,119 CAM MODE DETECTOR
Q120,128-131 DEW SENSOR DETECT
Q115,117,118 BUFFER
TP110(4VD)
TP111(1/2VD)
③
④
SS-49C(13-30 PAGE)
SVO-9620(1)
+5V
IC104 Vcc DOWN DETECT
IC101
8-BIT CPU DRUM/CAPSTAN SERVO & SYSTEM CONTOROL
TP101 (Vcc LEVEL)
Q104 Vcc SW
IC103 Q101-103 BACK UP POWER BLOCK
+12V
IC116 RESET PULSE GENERATOR
RV101 BACK UP Vcc LEVEL
SERIAL DATA
SERIAL
IC102 EE-PROM
Q105 Vcc DOWN DETECT
PD0-PD7
TP109 (FRC)
IC109 MOTOR DRIVER
CASSECON
LOADING
TP106 (FACTORY USE)
TP107 (L-ADJ)
TP108 (CPU CHECK)
TP114 (DRUM ERR)
LPF
IC108 BUFFER AMP
DRUM
TP113 (DFG)
⑤
Q114 FG AMP
TP103 (CAP FG)
①
IC501,508 CAPSTAN FG DET
IC505,513 CAPSTAN FG AMP
RV503 CAPSTAN FG
L:CAP FWD DET
X101 8MHz OSC
TP105 (FUCTORY USE)
IC506 DIR CONTROL
TP102 (WORK)
TP504 (STOP SERVO ERROR)
⑰
⑯
TP505 (CAPSTAN FG(B))
TP502 (PG+5V)
TP503 (SERVO ADJUST)
IC505,509 CAPSTAN FG AMP
IC514,Q506 CAPSTAN STOP SERVO
RV502 CAPSTAN ERROR
RV500 CAPSTAN FG
Q108,109 MOTOR DRIVER
IC108 BUFFER AMP
IC510
TP112 (CAP ERROR)
TP506 (CAP FWD)
L:CAP FWD
Q516 Q507,510 STOP SERVO SW
RV102 SW POSITION
IC503 CAPSTAN FG +5V REG
②
TP104 (DPG)
IC106,107 PG AMP & WAVE SHAPER
CAPSTAN
DRUM


SERIAL DATA
CN114
CN134
CN111
CN001
CN105
CN106
CN101
CN110
CN112
FACTORY USE
33P RS-232C, RS-422 (OPTION)
IC109 MOTOR DRIVER
CASSECON MOTOR M1006
CM-14
LOADING MOTOR M1005
LD-35
TEN REG CDS
SE-159
TEN REG LED
LE-86
Q1 TAPE TOP SENSOR
SE-152
Q1 TAPE END SENSOR
SE-151
TOP/END LED
LE-80
IC1 MOTOR DRIVER
FG AMP
M1001 DRUM MOTOR
DR-167(2/2)
IC5 FG AMP
M1002 CAPSTAN MOTOR
Q1-3 MOTOR DRIVER
DR-176
IC506,508 CAPSTAN FG DET
IC505,513 CAPSTAN FG AMP
RV503 CAPSTAN FG
TP502 (PG+5V)
TP503 (SERVO ADJUST)
TP505 (CAPSTAN FG(B))
IC514,Q506 CAPSTAN STOP SERVO
RV502 CAPSTAN ERROR
IC505,509 CAPSTAN FG AMP
RV500 CAPSTAN FG
IC510
TP112 (CAP ERROR)
TP506 (CAP FWD)
L:CAP FWD
IC503 CAPSTAN FG +5V REG
IC106,107 PG AMP & WAVE SHAPER
DRUM ERROR
DRUM FG
CAPSTAN FG(B)
CAPSTAN FG(A)
CAPSTAN ERROR
L:CAPSTAN FWD
CAPSTAN FG Vcc
DRUM PG(-)
DRUM PG(+)
RV301 FWD TENSION
RV301 REV TENSION
RV301 STILL TENSION
IC314 Q301,303,336 MODE SELECTOR
Vcc DET
Q331
IC601 SENSOR AMP
IC305 T-REEL FG AMP
IC309 S-REEL FG AMP
DUS-445
IC307,308 DIR DET STOP DET
X301 4MHz OSC
Q346-349 SOLENOID DRIVER
PM1002 PINCH
IC306
4-BIT CPU (REEL SERVO)
TP301 (S-TENSION)
IC310 Q304 TENREG AMP
IC315
TP314 (S-ERROR)
IC301(1/2) AMP
IC304,Q306 REF OSC
IC304 Q307,308 S-REEL MOTOR DRIVER
TP306 (S-OUT)
S-REEL MOTOR
FG
R426-441 D/A CONV
IC301 AMP
TENSION F.B
IC303(1/3)
TP305 (S-CURRENT)
IC301(2/2) CURRENT FEED BACK
RV303 S-TORQUE
Q305 FG BIAS REGULATOR
R442-457 D/A CONV
IC302(1/3) AMP
TP313 (T-ERROR)
IC302(2/3) AMP
IC304,Q309,310 T-REEL MOTOR DRIVER
TP308 (T-OUT)
T-REEL MOTOR
IC303(2/3)
IC303(3/3)
TP307 (T-CURRENT)
IC302(3/3) CURRENT FEED BACK
RV304 T-TORQUE
Q351 INV
SPEED SERVO
TP311 (CAP CURRENT)
IC311,312 Q323 REEL TRANSIENT CORRECTION AMP
Q320,321 INV
Q312-319,332 SOLENOID DRIVER
Q311 POWER OFF BRAKE
Q302,334,335,337 338,340,341,342,352 SOLENOID DRIVER
Q350 CORRECTION AMP DISABLE SWITCH
PM1001 BRAKE
PM1001 T BRAKE
CAPSTAN MOTOR
CAPSTAN CURRENT
CN131
CN142
CN114
CN134
L:REC STANDBY
QUASI VD
L:S-VHS
H:VIDEO MUTE
RF SW PULSE
H:EE/L:PB
VO-37
AU
HN-182
TP115 (SWP)
CN151
CN152
CN153
CN154
SERIAL IN
SERIAL OUT
SERIAL CLOCK
L:KY SELECT
L:RESET
REMOCON Vcc
REMOCON SIG
REMOTE
Q101 REMOTE CONTROL SIG AMP
H:PAL/L:NTSC4.43
SEARCH DIAL
IC101 8-BIT FUNCTION CONTROL PANEL CPU
TP101
Q102-108 LED DRIVER
Q109-116 MATRIX
IC102 LED DRIVER
ND101 ND102 ND103
S101:REW S110:MRKB
S102:ITEM S111:EJECT
S107:FF S113:PLAY
S109:DATA S115:STOP
S117:PAUSE
D134:REW
D135:PLAY
D137:SEARCH
D138:FF
D139:PAUSE
Q125,126 LED DRIVER
IC103 Q117-124 DECODER
S102 SW CTL MEMU
S104 SW PRGREW RPGRP
S101 RESET SW
D101:AUTO OFF D104:C IN
D103:S-VHS
S105 SW
SCAN5-8
KY-229A (13-40 PAGE)
DP-166 (13-40 PAGE)
SW-532

SECTION 12
SEMICONDUCTOR PIN ASSIGNMENTS

ICs, transistors and diodes that functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

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MC14070BCP	12-16
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2SC1623	12-22
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RD ? ?M	12-23
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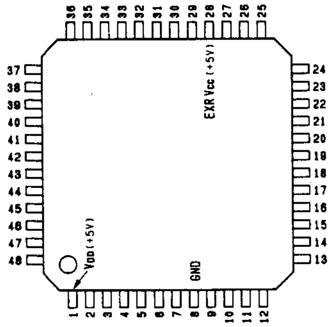
The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

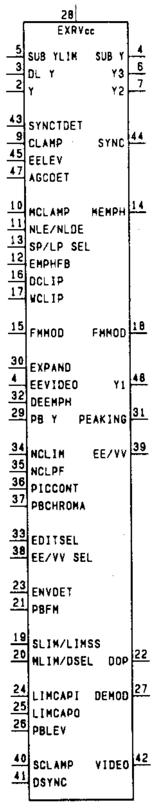
AN3237FB (MATSUSHITA) FLAT PACKAGE

VTR LUMINANCE SIGNAL PROCESSOR

– TOP VIEW –


EXR Vcc (+5V)
VDD (+5V)
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48

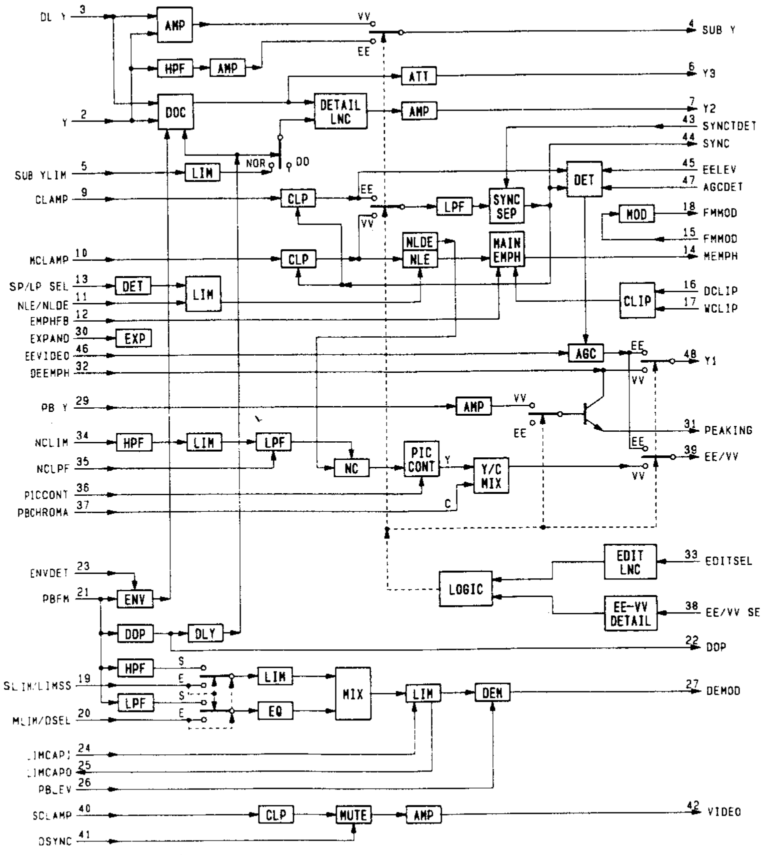
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	–	Vcc (+5V)	17	I	WCLIP	33	I	EDITSEL
2	I	Y	18	O	FMMOD	34	I	NCLIM
3	I	DL Y	19	I	SLIM/LIMSS	35	I	NCLPF
4	O	SUB Y	20	I	MLIM/DSEL	36	I	PICCONT
5	I	SUB YLIM	21	I	PBFM	37	I	PBCHROMA
6	O	Y3	22	O	DOP	38	I	EE/VV SEL
7	O	Y2	23	I	ENVDET	39	O	EE/VV
8	–	GND	24	I	LIMCAPI	40	I	SCLAMP
9	I	CLAMP	25	O	LIMCAPO	41	I	DSYNC
10	I	MCLAMP	26	I	PBLEV	42	O	VIDEO
11	I	NLE/NLDE	27	O	DEMOD	43	I	SYNCTDET
12	I	EMPHFB	28	–	EXRVcc (+5V)	44	O	SYNC
13	I	SP/LP SEL	29	I	PB Y	45	I	EELEV
14	O	MEMPH	30	I	EXPAND	46	I	EEVIDEO
15	I	FMMOD	31	O	PEAKING	47	I	AGCDET
16	I	DCLIP	32	I	DEEMPH	48	O	Y1


28
EXRVcc
5 SUB YLIM
3 DL Y
2 Y
SUB Y 4
Y3 6
Y2 7
43 SYNCTDET
9 CLAMP
45 EELEV
47 AGCDET
SYNC 44
10 MCLAMP
11 NLE/NLDE
13 SP/LP SEL
12 EMPHFB
16 DCLIP
17 WCLIP
MEMPH 14
15 FMMOD
FMMOD 18
30 EXPAND
4 EEVIDEO
32 DEEMPH
29 PB Y
Y1 48
PEAKING 31
34 NCLIM
35 NCLPF
36 PICCONT
37 PBCHROMA
EE/VV 39
33 EDITSEL
38 EE/VV SEL
23 ENVDET
21 PBFM
19 SLIM/LIMSS
20 MLIM/DSEL
DOP 22
24 LIMCAPI
25 LIMCAPO
26 PBLEV
DEMOD 27
40 SCLAMP
41 DSYNC
VIDEO 42

INPUT
AGCDET ; AUTO GAIN CONTROL DETECTION INPUT
CLAMP ; CLAMP INPUT
DCLIP ; DARK CLIP ADJUSTMENT INPUT
DEEMPH ; DEEMPHANSIS INPUT
DL Y ; DELAYED (1H) LUMINANCE SIGNAL INPUT
DSYNC ; DUMMY SYNC SIGNAL INPUT
EDITSEL ; EDIT MODE SELECT INPUT
EE/VV SEL ; EE/VV SELECT INPUT
EELEV ; EE VIDEO LEVEL ADJUSTMENT INPUT
EEVIDEO ; EE VIDEO INPUT
EMPHFB ; MAIN EMPHASIS FEEDBACK INPUT
ENVDET ; ENVELOPE DETECTION INPUT
EXPAND ; EXPANDER INPUT
FMMOD ; FM MODULATOR INPUT
LIMCAPI ; CAPACITOR CONNECTION FOR MAIN LIMITER
MCLAMP ; MAIN CLAMP INPUT
MLIM/DSEL ; DOUBLE (MAIN) LIMITER INPUT, WHEN EXTENDED DIFINITION MODE (S-VHS, Hi8 etc.) & DIFINITION SELECT INPUT
NCLIM ; LIMITER INPUT FOR NOISE CANCELER
NCLPF ; LPF INPUT FOR NOISE CANCELER
NLE/NLDE ; NON-LINEAR EMPHASIS/DEEMPHASIS INPUT
PBCHROMA ; PLAYBACK CHROMINANCE SIGNAL INPUT
PBFM ; PLAYBACK FM SIGNAL INPUT
PBLEV ; PLAYBACK LEVEL ADJUSTMENT INPUT
PB Y ; PLAYBACK Y SIGNAL INPUT
PICCONT ; PICTURE CONTROL INPUT
SCLAMP ; SECAND CLAMP INPUT
SLIM/LIMSS ; DOUBLE (SUB) LIMITER INPUT, WHEN EXTENDED DIFINITION MODE (S-VHS, Hi8 etc.) & DOUBLE LIMITER SWITCHOVER STOP INPUT
SP/LP SEL ; STANDARD/LONG PLAY MODE SELECT INPUT (FM CARRIER INTERLEAVE PULSE INPUT)
SUB YLIM ; LUMINANCE LIMITER INPUT
SYNCTDET ; SYNC TIP DETECTION INPUT
WCLIP ; WHITE CLIP ADJUSTMENT INPUT
Y ; LUMINANCE MAIN SIGNAL INPUT

OUTPUT
DEMOD ; FM DEMODULATOR OUTPUT
DOP ; DROPOUT PULSE OUTPUT
EE/VV ; EE/VV SWITCHOVER OUTPUT
FMMOD ; FM MODULATOR OUTPUT
LIMCAPO ; CAPACITOR CONNECTION FOR MAIN LIMITER
MEMPH ; MAIN EMPHASIS OUTPUT
PEAKING ; VIDEO PEAKING OUTPUT
SUB Y ; LUMUNANCE SUB SIGNAL OUTPUT
SYNC ; COMPOSITE SYNC OUTPUT
VIDEO ; COMPOSITE VIDEO OUTPUT
Y1 ; Y SIGNAL OUTPUT
Y2 ; Y SIGNAL OUTPUT FOR CLAMP
Y3 ; Y SIGNAL OUTPUT FOR DELAYED Y

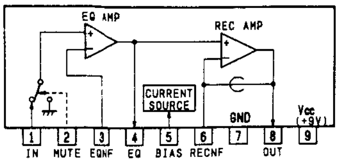
OTHER
EXRVcc ; EXCEPT REC Vcc (+5V)


DL Y 3
Y 2
SUB YLIM 5
CLAMP 9
MCLAMP 10
SP/LP SEL 13
NLE/NLDE 11
EMPHFB 12
EXPAND 30
EEVIDEO 46
DEEMPH 32
PB Y 29
NCLIM 34
NCLPF 35
PICCONT 36
PBCHROMA 37
ENVDET 23
PBFM 21
SLIM/LIMSS 19
MLIM/DSEL 20
LIMCAPI 24
LIMCAPO 25
PBLEV 26
SCLAMP 40
DSYNC 41
AMP
HPF
AMP
DOC
DETAIL LNC
ATT
AMP
LIM
NOR
DO
CLP
EE
VV
LPF
SYNC SEP
DET
MOD
CLP
NLDE
NLE
MAIN EMPH
CLIP
DET
LIM
EXP
AGC
AMP
HPF
LIM
LPF
NC
PIC CONT
Y
Y/C MIX
C
EDIT LNC
LOGIC
EE-VV DETAIL
ENV
DOP
DLY
HPF
LPF
S
E
LIM
EQ
MIX
LIM
DEM
CLP
MUTE
AMP
4 SUB Y
6 Y3
7 Y2
43 SYNCTDET
44 SYNC
45 EELEV
47 AGCDET
18 FMMOD
15 FMMOD
14 MEMPH
16 DCLIP
17 WCLIP
48 Y1
31 PEAKING
39 EE/VV
33 EDITSEL
38 EE/VV SEL
22 DOP
27 DEMOD
42 VIDEO

NOTE: S:STANDARD DIFINITION
E:EXTENDED DIFINITION

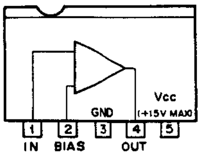
AN6392L (MATSUSHITA)

VIDEO SIGNAL RECODING AMPLIFIER
- PRINTED SIDE VIEW -


EQ AMP
REC AMP
CURRENT SOURCE
GND
Vcc (+9V)
1 IN
2 MUTE
3 EQNF
4 EQ
5 BIAS
6 RECNF
7
8 OUT
9

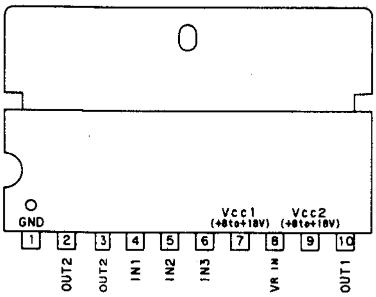
BA401 (ROHM)

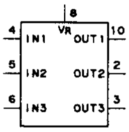
RF AMPLIFIER
- SIDE VIEW -

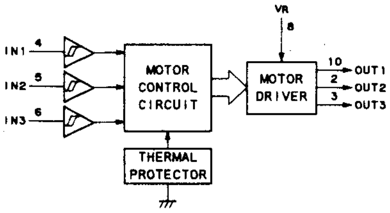

GND
Vcc (+15V MAX)
1 IN
2 BIAS
3
4 OUT
5

BA6238A (ROHM)

FORWARD AND REVERSE MOTOR DRIVER
- SIDE VIEW -


GND
Vcc1 (+8to+18V)
Vcc2 (+8to+18V)
1
2 OUT2
3 OUT2
4 IN1
5 IN2
6 IN3
7
8 VR IN
9
10 OUT1


8
VR
4 IN1
OUT1 10
5 IN2
OUT2 2
6 IN3
OUT3 3

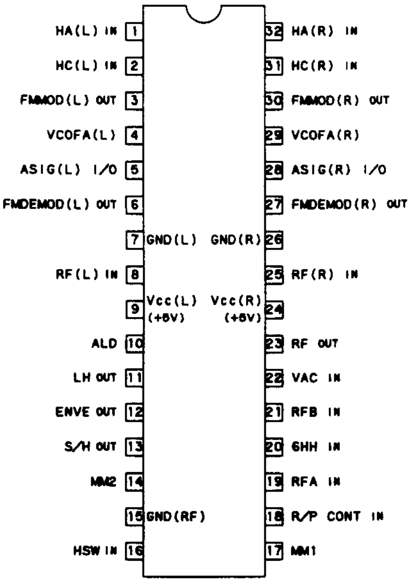

IN1 4
IN2 5
IN3 6
MOTOR CONTROL CIRCUIT
VR 8
MOTOR DRIVER
10 OUT1
2 OUT2
3 OUT3
THERMAL PROTECTOR

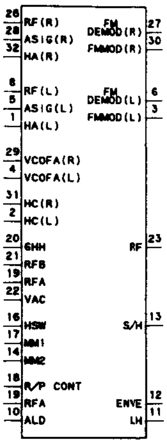
INPUT			OUTPUT			OPERATION
IN1	IN2	IN3	OUT1	OUT2	OUT3	
0	0	X	0	0	0	BRAKE
1	0	0	1	0	OPEN	MOTOR CURRENT OUT1→OUT2
1	0	1	0	1	OPEN	MOTOR CURRENT OUT2→OUT1
0	1	0	1	OPEN	0	MOTOR CURRENT OUT1→OUT3
0	1	1	0	OPEN	1	MOTOR CURRENT OUT3→OUT1
1	1	X	0	0	0	BRAKE

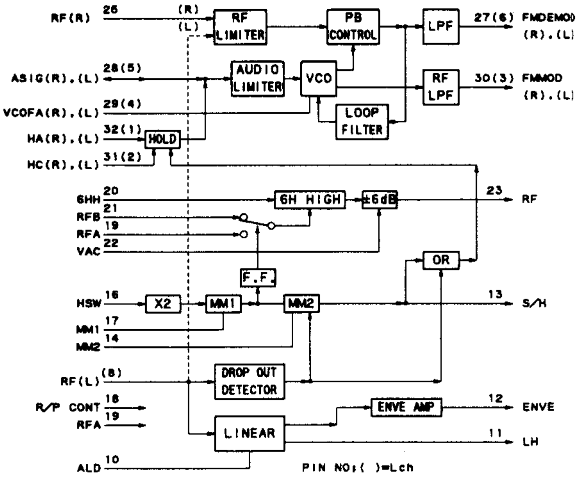
0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

AN3932S (MATSUSHITA)

FM AUDIO AND FM MAIN FOR VCR
- TOP VIEW -


HA(L) IN 1
HC(L) IN 2
FMMOD(L) OUT 3
VCOFA(L) 4
ASIG(L) I/O 5
FMDEMOD(L) OUT 6
7 GND(L)
RF(L) IN 8
9 Vcc(L) (+5V)
ALD 10
LH OUT 11
ENVE OUT 12
S/H OUT 13
MM2 14
15 GND(RF)
HSW IN 16
17 MM1
18 R/P CONT IN
19 RFA IN
20 6HH IN
21 RFB IN
22 VAC IN
23 RF OUT
24 Vcc(R) (+5V)
25 RF(R) IN
26 GND(R)
27 FMDEMOD(R) OUT
28 ASIG(R) I/O
29 VCOFA(R)
30 FMMOD(R) OUT
31 HC(R) IN
32 HA(R) IN


25 RF(R)
28 ASIG(R)
32 HA(R)
FM DEMOD(R) 27
FMMOD(R) 30
8 RF(L)
5 ASIG(L)
1 HA(L)
FM DEMOD(L) 6
FMMOD(L) 3
29 VCOFA(R)
4 VCOFA(L)
31 HC(R)
2 HC(L)
20 6HH
21 RFB
19 RFA
22 VAC
RF 23
16 HSW
17 MM1
14 MM2
S/H 13
18 R/P CONT
19 RFA
10 ALD
ENVE 12
LH 11


RF(R) 25
(R)
(L)
RF LIMITER
PB CONTROL
LPF
27(6) FMDEMOD (R).(L)
ASIG(R).(L) 28(5)
AUDIO LIMITER
VCO
RF LPF
30(3) FMMOD (R).(L)
VCOFA(R).(L) 29(4)
LOOP FILTER
HA(R).(L) 32(1)
HOLD
HC(R).(L) 31(2)
6HH 20
RFB 21
RFA 19
VAC 22
6H HIGH
±6dB
23 RF
OR
F.F.
HSW 16
X2
MM1
MM2
13 S/H
MM1 17
MM2 14
RF(L) (8)
DROP OUT DETECTOR
R/P CONT 18
RFA 19
ENVE AMP
12 ENVE
LINEAR
11 LH
ALD 10

PIN NO;( )=Lch

INPUT
6HH ;6H HIGH
HA(R).(L) ;HOLD AMP
HC(R).(L) ;HOLD CONTROL
HSW ;HOLD SWITCH
RF(R).(L) ;RF SIGNAL
RFA ;RF INPUT A
RFB ;RF INPUT B
R/P CONT ;REC/PB CONTROL
VAC ;VARIABLE AMP CONTROL

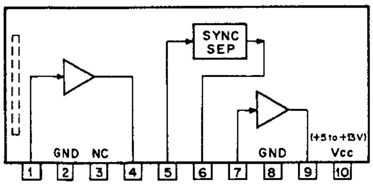
OUTPUT
ENVE ;ENVELOPE
FMDEMOD(R).(L) ;FM DEMODULATION
FMMOD(R).(L) ;FM MODULATION
LH ;LINEAR HIGH
RF ;RF OUTPUT
S/H ;S/H OUTPUT

INPUT/OUTPUT
ASIG;AUDIO SIGNAL

OTHERS
ACD ;AUDIO LINEAR DETECTION
MM1 ;MONO MULTI1
MM2 ;MONO MULTI2
VCOFA(R).(L);VCO FREQUENCY ADJUSTMENT

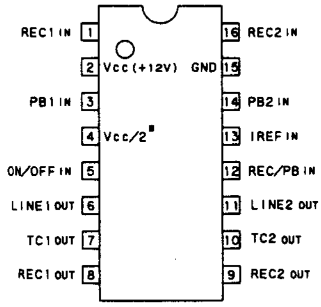
BX3915A (SONY)

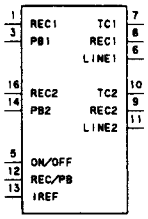
SYNC SEPARATOR
– REAR VIEW –


SYNC SEP
GND
NC
GND
(+5 to +15V) Vcc
1
2
3
4
5
6
7
8
9
10

CXA1102P (SONY)

DOLBY TYPE-B NOISE REDUCTION SYSTEM
– TOP VIEW –

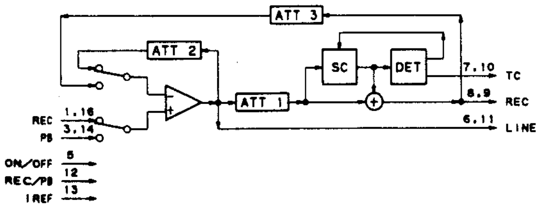

REC1 IN 1
2 Vcc (+12V)
PB1 IN 3
4 Vcc/2*
ON/OFF IN 5
LINE1 OUT 6
TC1 OUT 7
REC1 OUT 8
16 REC2 IN
GND 15
14 PB2 IN
13 IREF IN
12 REC/PB IN
11 LINE2 OUT
10 TC2 OUT
9 REC2 OUT


1 REC1
3 PB1
TC1 7
REC1 8
LINE1 6
16 REC2
14 PB2
TC2 10
REC2 9
LINE2 11
5 ON/OFF
12 REC/PB
13 IREF

*Vcc/2:SINGLE VOLTAGE :+6V
DOUBLE VOLTAGE :GND

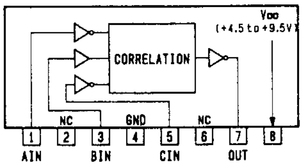
INPUT
IREF :REFERENCE CURRENT SOURCE
ON/OFF:DOLBY NR ON/OFF SELECT(H:OFF/L:ON)
PB :PB(DECODE) INPUT
REC :REC(ENCODE) INPUT
REC/PB:REC/PB SELECT(H:PB/L:REC)

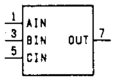
OUTPUT
LINE:LINE(DECODE) OUTPUT
REC :REC(ENCODE) OUTPUT
TC :LEVEL DETECTOR TIME CONSTANT


ATT 3
ATT 2
SC
DET
ATT 1
7,10 TC
8,9 REC
6,11 LINE
REC 1,16
PB 3,14
ON/OFF 5
REC/PB 12
IREF 13

CXA1413L (SONY) FLAT PACKAGE

VERTICAL CORRELATOR FOR DYNAMIC COM FILTER
– PRINTED SIDE VIEW –


VDD (+4.5 to +9.5V)
CORRELATION
NC
GND
NC
1
2
3
4
5
6
7
8
AIN
BIN
CIN
OUT

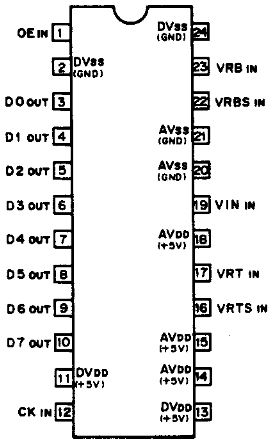

1 AIN
3 BIN
5 CIN
OUT 7

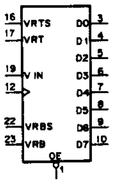
INPUT
AIN ;0H INPUT
BIN ;1H INPUT
CIN ;2H INPUT
$\left(\begin{array}{l}\text{BIASED TO } \frac{V_{DD}}{2} + 0.7V \\ \text{INPUT RESISTANCE AT 20k-OHM}\end{array}\right)$

OUTPUT
OUT ;CORRELATED OUTPUT $\left(\frac{V_{DD}}{2} - 0.7V\right)$

CXD1175AM (SONY) FLAT PACKAGE

C-MOS 8-BIT 20MSPS VIDEO A/D CONVERTER
– TOP VIEW –

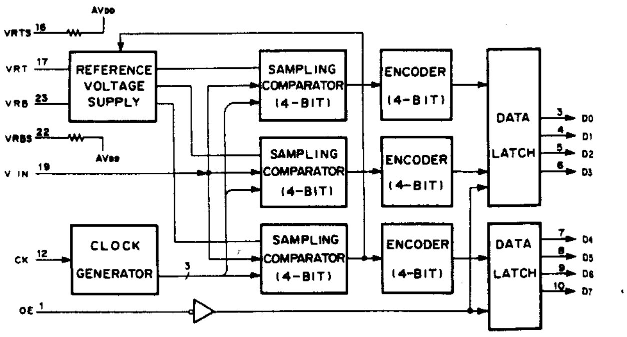

OE IN 1
2 DVss (GND)
D0 OUT 3
D1 OUT 4
D2 OUT 5
D3 OUT 6
D4 OUT 7
D5 OUT 8
D6 OUT 9
D7 OUT 10
11 DVDD (+5V)
CK IN 12
DVss (GND) 24
23 VRB IN
22 VRBS IN
AVss (GND) 21
AVss (GND) 20
19 VIN IN
AVDD (+5V) 18
17 VRT IN
16 VRTS IN
AVDD (+5V) 15
AVDD (+5V) 14
DVDD (+5V) 13


16 VRTS
17 VRT
19 VIN
12
22 VRBS
23 VRB
OE 1
D0 3
D1 4
D2 5
D3 6
D4 7
D5 8
D6 9
D7 10

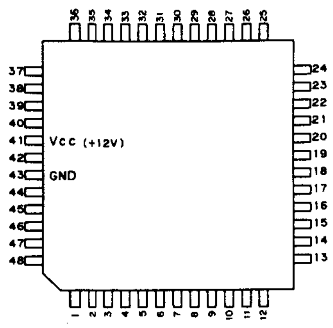
AV$_{DD}$: ANALOG POWER SUPPLY
AV$_{SS}$: ANALOG GROUND
CK : CLOCK INPUT
D0 – 7 : DIGITAL DATA OUTPUTS (LSB to MSB)
DV$_{DD}$: DIGITAL POWER SUPPLY
DV$_{SS}$: DIGITAL GROUND
OE : OUTPUT ENABLE
(OE = HIGH : HIGH IMPEDANCE)
VIN : ANALOG VOLTAGE INPUT
VRB : BOTTOM REFERENCE VOLTAGE INPUT
VRBS : AS SHORT-CIRCUIT AT VRB,
GENERATES + 0.6V
VRT : TOP REFERENCE VOLTAGE INPUT
VRTS : AS SHORT-CIRCUIT AT VRT,
GENERATES + 2.6V

STEP	INPUT SIGNAL VOLTAGE	DATA OUTPUTS							
		D7	D6	D5	D4	D3	D2	D1	D0
0	0V (VRT)	1	1	1	1	1	1	1	1
1	0.01V	1	1	1	1	1	1	1	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	1.34V	1	0	0	0	0	0	0	0
128	1.35V	0	1	1	1	1	1	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
255	2.7V (VRB)	0	0	0	0	0	0	0	0

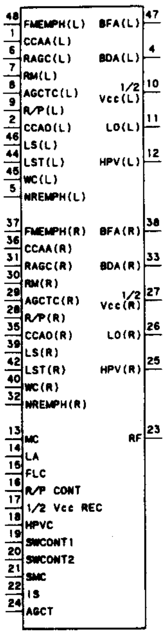
0 : LOW LEVEL
1 : HIGH LEVEL

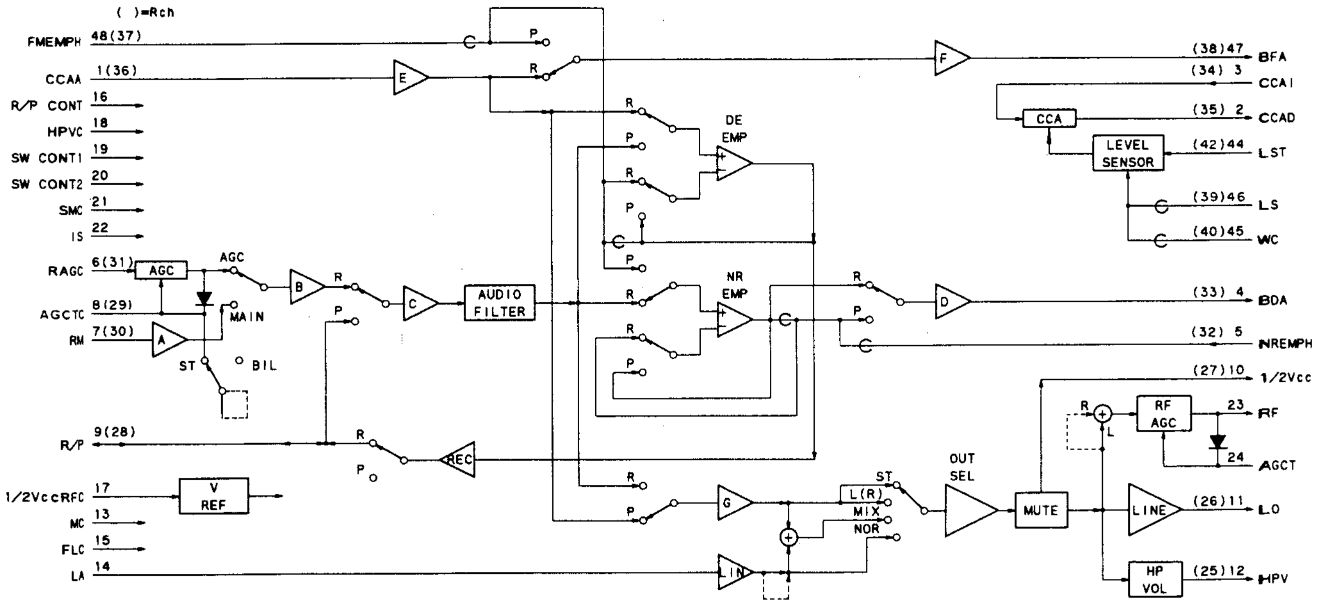

AVDD
VRTS 16
VRT 17
VRB 23
VRBS 22
AVss
V IN 19
REFERENCE VOLTAGE SUPPLY
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
DATA LATCH
DATA LATCH
CK 12
CLOCK GENERATOR
3
OE 1
3 D0
4 D1
5 D2
6 D3
7 D4
8 D5
9 D6
10 D7

AN3972FC (MATSUSHITA) FLAT PACKAGE
PEAK NOISE REDUCTION FOR HIFI VCR FM AUDIO
– TOP VIEW –


36
35
34
33
32
31
30
29
28
27
26
25
37
38
39
40
41
42
43
44
45
46
47
48
Vcc (+12V)
GND
24
23
22
21
20
19
18
17
16
15
14
13
1
2
3
4
5
6
7
8
9
10
11
12

PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL
1	I	CCAA(L)	17	I	1/2VccRFC	33	O	BDA(R)
2	O	CCAO(L)	18	I	HPVC	34	I	CCAI(R)
3	I	CCAI(L)	19	I	SWCONT1	35	O	CCAO(R)
4	O	BDA(L)	20	I	SWCONT2	36	I	CCAA(R)
5	I	NREMPH(L)	21	I	SMC	37	I	FMEMPH(R)
6	I	RAGC(L)	22	I	IS	38	O	BFA(R)
7	I	RM(L)	23	O	RF	39	I	LS(R)
8	I	AGCTC(L)	24	I	AGCT	40	I	WC(R)
9	I/O	R/P(L)	25	O	HPV(R)	41	–	Vcc(+12V)
10	O	1/2 Vcc(L)	26	O	LO(R)	42	I	LST(R)
11	O	LO(L)	27	O	1/2Vcc(R)	43	–	GND
12	O	HPV(L)	28	I/O	R/P(R)	44	I	LST
13	I	MC	29	I	AGCTC(R)	45	I	WC(L)
14	I	LA	30	I	RM(R)	46	I	LS(L)
15	I	FLC	31	I	RAGC(R)	47	O	BFA(L)
16	I	R/P CONT	32	I	NREMPH(R)	48	I	FMEMPH(L)


48 FMEMPH(L)
1 CCAA(L)
6 RAGC(L)
7 RM(L)
8 AGCTC(L)
9 R/P(L)
2 CCAO(L)
46 LS(L)
44 LST(L)
45 WC(L)
5 NREMPH(L)
BFA(L) 47
BDA(L) 4
1/2 Vcc(L) 10
LO(L) 11
HPV(L) 12
37 FMEMPH(R)
36 CCAA(R)
31 RAGC(R)
30 RM(R)
29 AGCTC(R)
28 R/P(R)
35 CCAO(R)
39 LS(R)
42 LST(R)
40 WC(R)
32 NREMPH(R)
BFA(R) 38
BDA(R) 33
1/2 Vcc(R) 27
LO(R) 26
HPV(R) 25
13 MC
14 LA
15 FLC
16 R/P CONT
17 1/2 Vcc REC
18 HPVC
19 SWCONT1
20 SWCONT2
21 SMC
22 IS
24 AGCT
RF 23


( )=Rch
FMEMPH 48(37)
CCAA 1(36)
R/P CONT 16
HPVC 18
SW CONT1 19
SW CONT2 20
SMC 21
IS 22
RAGC 6(31)
AGCTC 8(29)
RM 7(30)
AGC
MAIN
ST
BIL
A
B
C
E
F
D
G
AUDIO FILTER
DE EMP
NR EMP
REC
R/P 9(28)
1/2VccRFC 17
V REF
MC 13
FLC 15
LA 14
LIN
L(R)
MIX
NOR
OUT SEL
MUTE
LINE
HP VOL
RF AGC
CCA
LEVEL SENSOR
R
P
L
(38)47 BFA
(34) 3 CCAI
(35) 2 CCAO
(42)44 LST
(39)46 LS
(40)45 WC
(33) 4 BDA
(32) 5 NREMPH
(27)10 1/2Vcc
23 RF
24 AGCT
(26)11 LO
(25)12 HPV

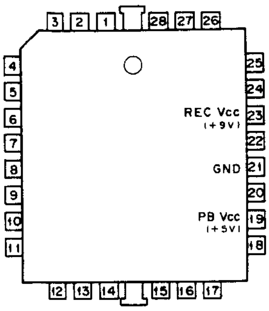
INPUT
1/2 Vcc RFC ; 1/2 Vcc RIPPLE FILTERER CAPACITOR
AGCT ; AGC TIMING FOR RF
AGCTC (L),(R) ; AGC TIMING CAPACITOR
CCAA (L),(R) ; CCA AMP
CCAI (L),(R) ; CCA INPUT
FLC ; FORCED LINEAR CONTROL
FMEMPH (L),(R) ; FM EMPHASIS CAPACITOR
HPVC ; HEADPHONE VOLUME CONTROL DC
IS ; REC AGC/MANUAL CONTROL
LA ; LINEAR AUDIO
LS (L),(R) ; LEVEL SENSOR
LST (L),(R) ; LEVEL SENSOR TIMING
MC ; MUTING CONTROL
NREMPH (L),(R) ; NR EMPHASIS CAPACITOR
RAGC (L),(R) ; REC AGC
RM (L),(R) ; REC MANUAL
R/P CONT ; REC/PB CONTROL
SMC ; AGC ST/BILL/OUTPUT MIX CONTROL
SW CONT1 ; OUTPUT SWITCHING CONTROL1
SW CONT2 ; OUTPUT SWITCHING CONTROL2

OUTPUT
1/2 Vcc (L),(R) ; 1/2 Vcc OUTPUT
BDA (L),(R) ; BUFFER D AMP
BFA (L),(R) ; BUFFER F AMP
CCAO (L),(R) ; CCA OUTPUT
HPV (L),(R) ; HEADPHONE VOLUME
LO (L),(R) ;LINE OUTPUT
RF ;OUTPUT FOR RF

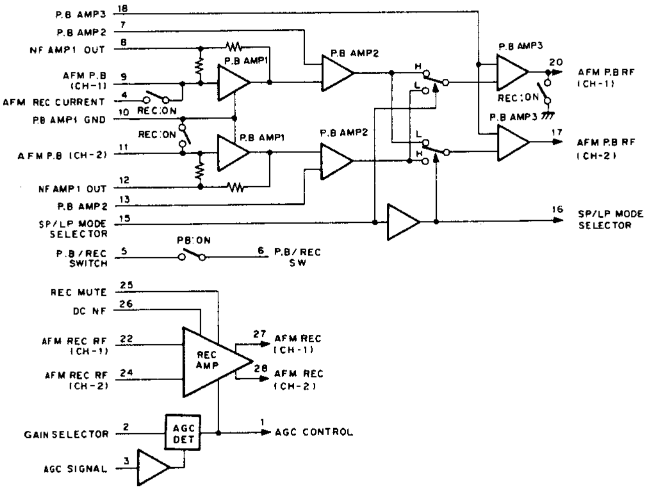
INPUT/OUTPUT
R/P (L),(R);REC OUT/PB IN

HA12115MP (HITACHI)

REC/PLAY AMPLIFIER FOR Hi-Fi VHS
- TOP VIEW -

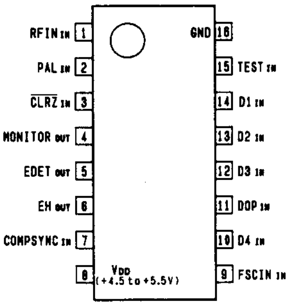

3
2
1
28
27
26
4
5
6
7
8
9
10
11
25
24
23
22
21
20
19
18
REC Vcc (+9V)
GND
PB Vcc (+5V)
12
13
14
15
16
17

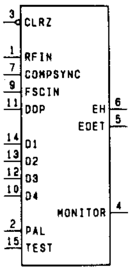
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	AGC CONTROL	15	I	SP/LP MODE SELECTOR
2	I	GAIN SELECTOR	16	O	SP/LP MODE SELECTOR
3	I	AGC SIGNAL	17	O	AFM P.B RF (CH-1)
4	I	AFM REC CURRENT	18	I	P.B AMP3
5	I	P.B/REC SWITCH	19	–	P.B Vcc
6	O	P.B/REC SWITCH	20		AFM P.B RF (CH-2)
7	I	P.B AMP2	21	–	GND
8	O	NF AMP1	22	I	AFM REC RF (CH-1)
9	I	AFM P.B (CH-1)	23	–	REC Vcc
10	I	P.B AMP1 GND	24	I	AFM REC RF (CH-2)
11	I	AFM P.B (CH-2)	25	I	REC MUTE
12	I	NF AMP1	26	I	DC NF
13	O	P.B AMP1	27	O	AFM REC (CH-1)
14	–	PRE Vcc	28	O	AFM REC (CH-2)


P.B AMP3 18
P.B AMP2 7
NF AMP1 OUT 8
AFM P.B (CH-1) 9
AFM REC CURRENT 4
PB AMP1 GND 10
REC:ON
REC:ON
AFM P.B (CH-2) 11
NF AMP1 OUT 12
P.B AMP2 13
SP/LP MODE SELECTOR 15
P.B/REC SWITCH 5
PB:ON
6 P.B/REC SW
P.B AMP1
P.B AMP1
P.B AMP2
P.B AMP2
P.B AMP3
P.B AMP3
H
L
L
H
REC:ON
20 AFM P.B RF (CH-1)
17 AFM P.B RF (CH-2)
16 SP/LP MODE SELECTOR
REC MUTE 25
DC NF 26
AFM REC RF (CH-1) 22
AFM REC RF (CH-2) 24
REC AMP
27 AFM REC (CH-1)
28 AFM REC (CH-2)
GAIN SELECTOR 2
AGC DET
1 AGC CONTROL
AGC SIGNAL 3

CXD2107M (SONY) FLAT PACKAGE

C-MOS DEFINITION DETECTOR
- TOP VIEW -

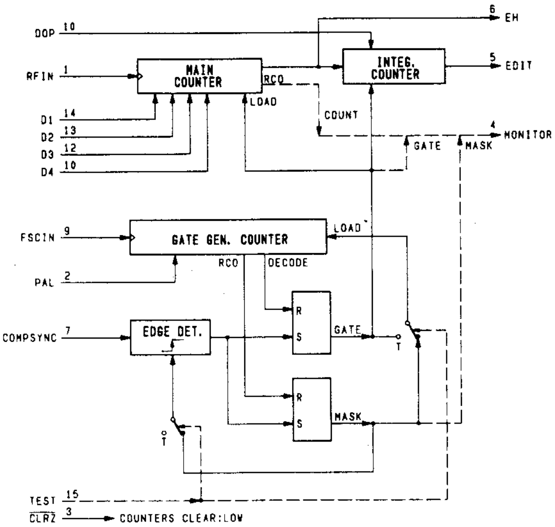

RFIN IN 1
PAL IN 2
CLRZ IN 3
MONITOR OUT 4
EDET OUT 5
EH OUT 6
COMPSYNC IN 7
8 VDD (+4.5 to +5.5V)
GND 16
15 TEST IN
14 D1 IN
13 D2 IN
12 D3 IN
11 DOP IN
10 D4 IN
9 FSCIN IN

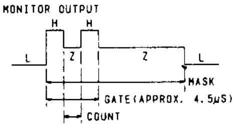

3 CLRZ
1 RFIN
7 COMPSYNC
9 FSCIN
11 DOP
EH 6
EDET 5
14 D1
13 D2
12 D3
10 D4
MONITOR 4
2 PAL
15 TEST

INPUT
CLRZ : CLEAR SIGNAL INPUT FOR INTERNAL COUNTERS
COMPSYNC: COMPOSITE SYNC INPUT
D1-D4 : LOAD DATA INPUTS FOR MAIN COUNTER (D0=HIGH, FIXED DATA)
DOP : DROPOUT COMPENSATION PULSE INPUT
FSCIN : COLOR SUBCARRIER INPUT. NTSC=3.579545MHz, PAL=4.433619MHz
PAL : OPERATION MODE SELECT INPUT. HIGH=PAL, LOW=NTSC
RFIN : PLAYBACK Y RF SIGNAL INPUT
TEST : TEST CONTROL INPUT. NORMAL=LOW

OUTPUT
EDET : E* MODE DETECTION OUTPUT, CONTINUOUS 16H
EH : E* MODE DETECTION OUTPUT, DISTINGUISH IN 1H
MONITOR : MONITOR OUTPUT OF COUNT, GATE, AND MASK PULSES

NOTE
E* : EXTENDED DEFINITION

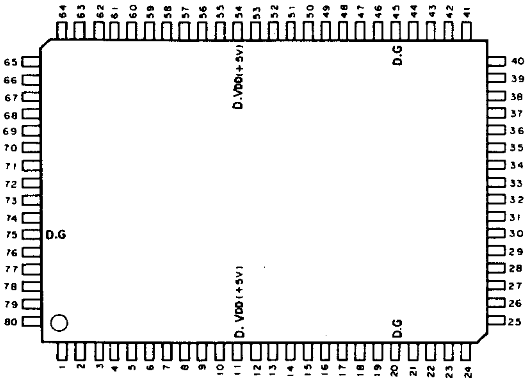

DOP 10
RFIN 1
D1 14
D2 13
D3 12
D4 10
MAIN COUNTER
RCO
LOAD
COUNT
INTEG. COUNTER
6 EH
5 EDIT
4 MONITOR
GATE
MASK
FSCIN 9
PAL 2
GATE GEN. COUNTER
LOAD
RCO
DECODE
COMPSYNC 7
EDGE DET.
R
S
GATE
R
S
MASK
T
T
TEST 15
CLRZ 3
COUNTERS CLEAR:LOW


MONITOR OUTPUT
H
H
L
Z
Z
L
MASK
GATE (APPROX. 4.5μS)
COUNT

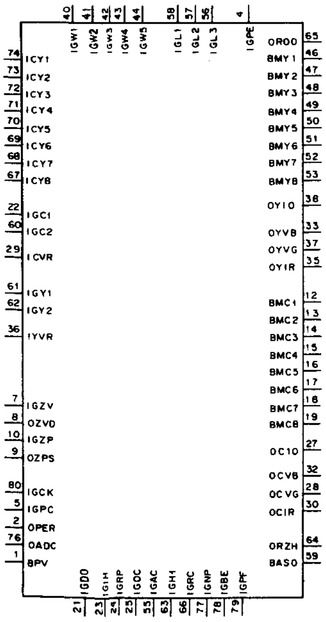
CXD2105AQ (SONY) FLAT PACKAGE

C-MOS DIGITAL COMB FILTER FOR VTR'S

– TOP VIEW –


64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41
65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25
D.VDD(+5V)
D.G
D.G
D. VDD(+5V)
D.G
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	BPV	21	I	IGD0	41	I	IGW2	61	I	IGY1
2	O	OPER	22	I	IGC1	42	I	IGW3	62	I	IGY2
3	–	A.VDD P	23	I	IGIH	43	I	IGW4	63	I	IGH1
4	I	IGPE	24	I	IGRP	44	I	IGW5	64	O	ORZH
5	I	IGPC	25	I	IGOC	45	–	D.G	65	O	OR00
6	–	A.G P	26	–	A.VDD C	46	I/O	BMY1	66	I	IGRC
7	I	IGZV	27	O	OCIO	47	I/O	BMY2	67	I	IYC8
8	O	OZVD	28	O	OCVG	48	I/O	BMY3	68	I	IYC7
9	O	OZPS	29	–	ICVR	49	I/O	BMY4	69	I	IYC6
10	I	IGZP	30	O	OCIR	50	I/O	BMY5	70	I	IYC5
11	–	D.VDD	31	–	A.G C	51	I/O	BMY6	71	I	IYC4
12	I/O	BMC1	32	O	OCVB	52	I/O	BMY7	72	I	IYC3
13	I/O	BMC2	33	O	OYVB	53	I/O	BMY8	73	I	IYC2
14	I/O	BMC3	34	–	A.G Y	54	–	D.VDD	74	I	IYC1
15	I/O	BMC4	35	O	OYIR	55	I	IGAC	75	–	D.G
16	I/O	BMC5	36	–	IYVR	56	I	IGL3	76	O	OADC
17	I/O	BMC6	37	O	OYVG	57	I	IGL2	77	I	IGNP
18	I/O	BMC7	38	O	OYIO	58	I	IGL1	78	I	IGBE
19	I/O	BMC8	39	–	A.VDD Y	59	I/O	BASO	79	I	IGPF
20	–	D.G	40	I	IGW1	60	I	IGC2	80	I	IGCK


40 IGW1
41 IGW2
42 IGW3
43 IGW4
44 IGW5
58 IGL1
57 IGL2
56 IGL3
4 IGPE
74 ICY1
73 ICY2
72 ICY3
71 ICY4
70 ICY5
69 ICY6
68 ICY7
67 ICY8
22 IGC1
60 IGC2
29 ICVR
61 IGY1
62 IGY2
36 IYVR
7 IGZV
8 OZVD
10 IGZP
9 OZPS
80 IGCK
5 IGPC
2 OPER
76 OADC
1 BPV
OR00 65
BMY1 46
BMY2 47
BMY3 48
BMY4 49
BMY5 50
BMY6 51
BMY7 52
BMY8 53
OYIO 38
OYVB 33
OYVG 37
OYIR 35
BMC1 12
BMC2 13
BMC3 14
BMC4 15
BMC5 16
BMC6 17
BMC7 18
BMC8 19
OCIO 27
OCVB 32
OCVG 28
OCIR 30
ORZH 64
BASO 59
IGDO 21
IGIH 23
IGRP 24
IGOC 25
IGAC 55
IGH1 63
IGRC 66
IGNP 77
IGBE 78
IGPF 79

INPUT

BPV ; EXT/INT CLOCK SELECT
ICVR ; ESTABLISHES MAXIMUM AMPLITUDE VALUE FOR OCIO (PIN 27)
IGAC ; V CORRELATION CIRCUIT ON/OFF
IGBE ; SINGLE WAVE DETECTION ON/OFF (Y/C SEPARATION MODE)
IGC1 ; V CORRELATION CIRCUIT SELECT
IGC2 ; CHROMA FLAT SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGCK ; EXTERNAL CLOCK
IGD0 ; DROPOUT CORRECTION
IGH1 ; FLAT SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGIH ; SLEW MODE SET
IGL1 – IGL3 ; LIMITER LEVEL ADJUST FOR Y SIGNAL COMB FILTER
IGNP ; NTSC/PAL FORMAT SELECT
IGOC ; OUTPUT ENABLE
IGPC ; VCO CONTROL
IGPE ; TEST
IGPF ; PLL SUBCARRIER
IGRC ; DELAY LINE LENGTH ADJUST
IGRP ; Y/C SEPARATION AND PLAYBACK MODE SELECT
IGW1 – IGW5 ; Y COMB FILTER DEPTH ADJUST
IGY1, IGY2 ; EDGE SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGZP ; 1-BIT DELAY CIRCUIT
IGZV ; VCR HEAD SWITCHING
IYC1 – IYC8 ; VIDEO SIGNAL
IYVR ; ESTABLISHES MAXIMUM AMPLITUDE VALUE FOR OYIO (PIN 38)

OUTPUT

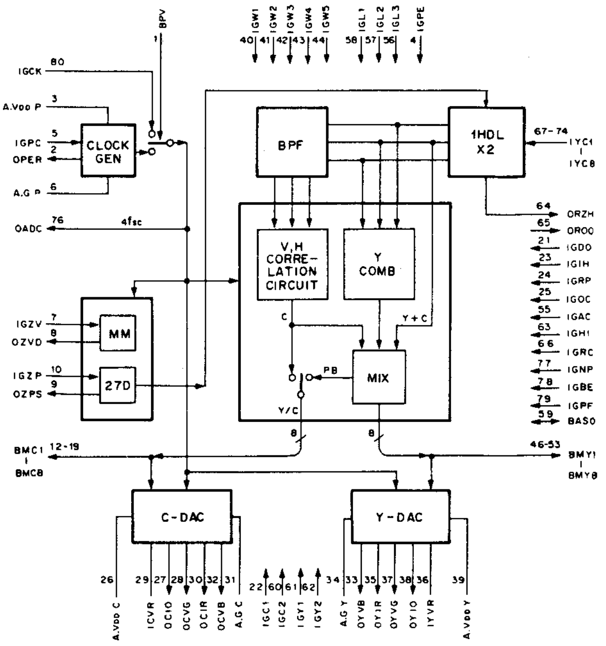
OADC ; CLOCK
OCIO ; CHROMA ANALOG SIGNAL
OCIR ; CONNECT A RESISTOR 16x LARGE THAN THE RESISTOR AT OCIO (PIN 27)
OCVB ; CONNECT TO DIGITAL GND WHICH HAS A CAPACITANCE OF UP TO 0.1 μF
OCVG ; CONNECT TO AN ANALOG POWER SUPPLY WHICH HAS A CAPACITANCE OF UP TO 0.1 μF
OPER ; PLL ERROR
OR00 ; "0" IS DETECTED AT ALL INPUTS
ORZH ; 1-BIT DELAY CIRCUIT
OYIO ; Y ANALOG SIGNAL
OYIR ; CONNECT A RESISTOR 16x LARGE THAN THE RESISTOR AT OYIO (PIN 38)
OYVB ; CONNECT TO DIGITAL GND WHICH HAS A CAPACITANCE OF UP TO 0.1 μF
OYVG ; CONNECT TO AN ANALOG POWER SUPPLY WHICH HAS A CAPACITANCE OF UP TO 0.1 μF
OZPS ; 1-BIT DELAY CIRCUIT
OZVD ; VSYNC PERIOD MASK

INPUT/OUTPUT

BASO ; EDGE DETECTION LEVEL SELECT (Y/C SEPARATION MODE)
BMC1 – BMC8 ; CHROMA DIGITAL SIGNAL
BMY1 – BMY8 ; Y DIGITAL SIGNAL

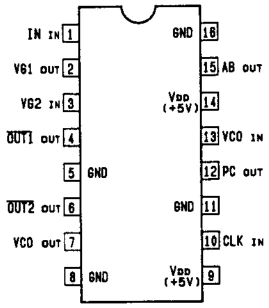
OTHER

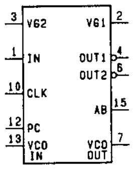
A.G C ; ANALOG GND FOR CHROMA D/A
A.G P ; ANALOG GND FOR VCO
A.G Y ; ANALOG GND FOR Y D/A
A.VDD C ; ANALOG POWER SUPPLY FOR CHROMA D/A
A.VDD P ; ANALOG POWER SUPPLY FOR VCO
A.VDD Y ; ANALOG POWER SUPPLY FOR Y D/A
D.G ; DIGITAL GND
D.VDD ; POWER SUPPLY FOR DIGITAL


BPV 1
IGW1 IGW2 IGW3 IGW4 IGW5
40 41 42 43 44
IGL1 IGL2 IGL3 IGPE
58 57 56 4
IGCK 80
A.VDD P 3
IGPC 5
OPER 2
A.G P 6
CLOCK GEN
OADC 76
4fsc
BPF
1HDL X2
67-74 IYC1 I IYC8
64 ORZH
65 OR00
21 IGDO
23 IGIH
24 IGRP
25 IGOC
55 IGAC
63 IGH1
66 IGRC
77 IGNP
78 IGBE
79 IGPF
59 BASO
V,H CORRE-LATION CIRCUIT
Y COMB
C
Y+C
PB
MIX
Y/C
IGZV 7
OZVD 8
MM
IGZP 10
OZPS 9
27D
8
8
BMC1 I BMC8 12-19
46-53 BMY1 I BMY8
C-DAC
Y-DAC
26 A.VDD C
29 ICVR
27 OCIO
28 OCVG
30 OCIR
32 OCVB
31 A.G C
22 IGC1
60 IGC2
61 IGY1
62 IGY2
34 A.G Y
33 OYVB
35 OYIR
37 OYVG
38 OYIO
36 IYVR
39 A.VDD Y

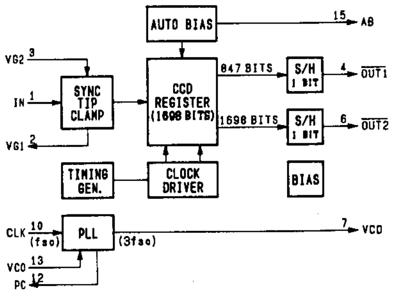
CXL1506M (SONY) FLAT PACKAGE

C-MOS CCD 1H/2H DELAY LINE FOR PAL VIDEO SYSTEM
– TOP VIEW –


IN IN 1
VG1 OUT 2
VG2 IN 3
OUT1 OUT 4
5 GND
OUT2 OUT 6
VCO OUT 7
8 GND
GND 16
15 AB OUT
VDD (+5V) 14
13 VCO IN
12 PC OUT
GND 11
10 CLK IN
VDD (+5V) 9

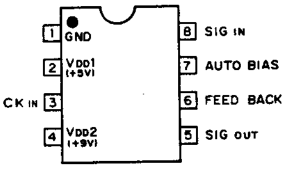

3 VG2
VG1 2
1 IN
OUT1 4
OUT2 6
10 CLK
AB 15
12 PC
13 VCO IN
VCO OUT 7

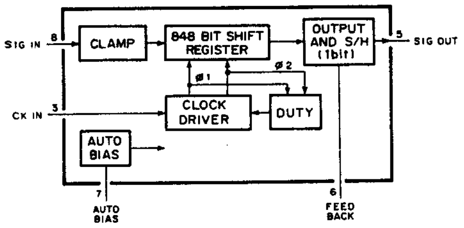
AB	; AUTO BIAS DC OUTPUT
CLK	; fsc CLOCK INPUT (4.433619 MHz)
IN	; POSITIVE SIGNAL INPUT
OUT1	; 1H DELAY SIGNAL OUTPUT (NEGATIVE)
OUT2	; 2H DELAY SIGNAL OUTPUT (NEGATIVE)
PC	; PHASE COMPARATER OUTPUT
VCO	; 3・fsc CLOCK OUTPUT (PIN 7)
VCO	; VCO INPUT (PIN 13)
VG1	; GATE BIAS 1 DC OUTPUT
VG2	; GATE BIAS 2 DC INPUT


AUTO BIAS
15 AB
VG2 3
IN 1
VG1 2
SYNC TIP CLAMP
CCD REGISTER (1698 BITS)
847 BITS
1698 BITS
S/H 1 BIT
4 OUT1
S/H 1 BIT
6 OUT2
TIMING GEN.
CLOCK DRIVER
BIAS
CLK 10 (fsc)
PLL
(3fsc)
7 VCO
VCO 13
PC 12

CXL5003M (SONY) FLAT PACKAGE

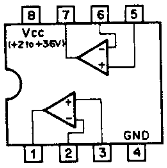
C-MOS CCD FOR PAL 1H DELAY LINE
– TOP VIEW –


1 GND
2 VDD1 (+5V)
CK IN 3
4 VDD2 (+9V)
8 SIG IN
7 AUTO BIAS
6 FEED BACK
5 SIG OUT


SIG IN 8
CLAMP
848 BIT SHIFT REGISTER
OUTPUT AND S/H (1bit)
5 SIG OUT
ø1
ø2
CK IN 3
CLOCK DRIVER
DUTY
AUTO BIAS
7 AUTO BIAS
6 FEED BACK

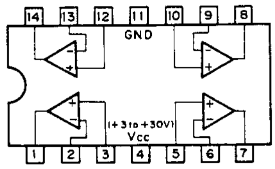
LM2903DQ (RAYTHEON)
NJM2903D (JRC)

DUAL VOLTAGE COMPARATORS
– TOP VIEW –


8 7 6 5
Vcc (+2 to +36V)
GND
1 2 3 4

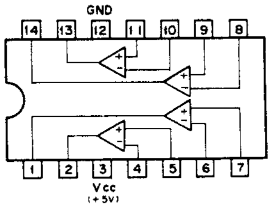
LM324N (TI)

QUAD OPERATIOAL AMPLIFIERS
– TOP VIEW –


14 13 12 11 10 9 8
GND
(+3 to +30V) Vcc
1 2 3 4 5 6 7

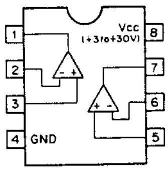
LM339N (TI)

QUAD COMPARATORS
– TOP VIEW –


GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
Vcc (+5V)

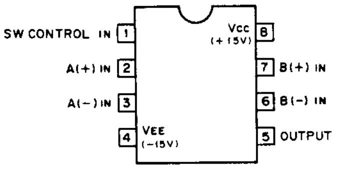
LM358P (TI)
UPC358C (NEC)

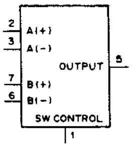
DUAL OPERATIONAL AMPLIFIERS
– TOP VIEW –

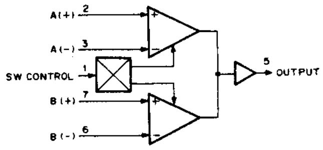

1 2 3 4 GND
Vcc (+3 to +30V) 8
7 6 5

M5201P (MITSUBISHI)

DUAL OPERATIONAL AMPLIFIERS WITH SWITCHED OUTPUT
– TOP VIEW –

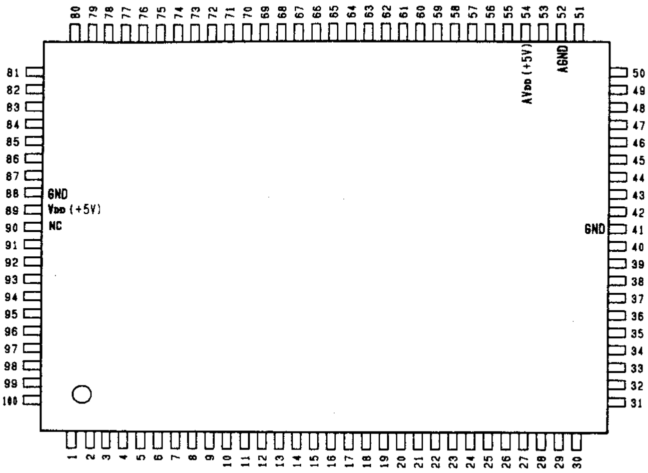

SW CONTROL IN 1
A(+) IN 2
A(–) IN 3
4 VEE (–15V)
Vcc (+15V) 8
7 B(+) IN
6 B(–) IN
5 OUTPUT


2 A(+)
3 A(–)
OUTPUT 5
7 B(+)
6 B(–)
SW CONTROL 1


A(+) 2
A(–) 3
SW CONTROL 1
B(+) 7
B(–) 6
5 OUTPUT

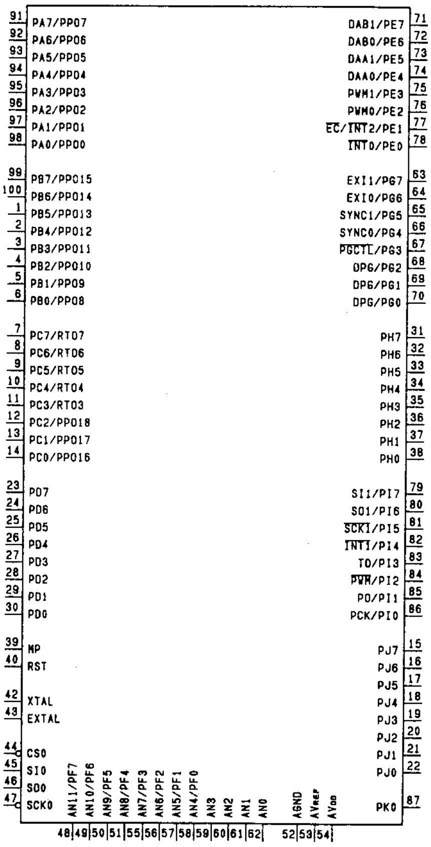
CXP80624 (SONY) FLAT PACKAGE
CXP80P624 (SONY) FLAT PACKAGE

C-MOS 8-BIT 1-CHIP MICROCOMPUTER
– TOP VIEW –


AVDD (+5V)
AGND
GND
VDD (+5V)
NC
GND

(VDD = AVDD = + 5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	PB5/PPO13	26	I/O	PD4	51	I/O	PF4/AN8	76	O	PE2/PWM0
2	O	PB4/PPO12	27	I/O	PD3	52	–	AGND	77	I	PE1/EC/INT2
3	O	PB3/PPO11	28	I/O	PD2	53	I	AVREF	78	I	PE0/INT0
4	O	PB2/PPO10	29	I/O	PD1	54	–	AVDD	79	I/O	PI7/SI1
5	O	PB1/PPO9	30	I/O	PD0	55	I	PF3/AN7	80	I/O	PI6/SO1
6	O	PB0/PPO8	31	I/O	PH7	56	I	PF2/AN6	81	I/O	PI5/SCK1
7	I/O	PC7/RTO7	32	O	PH6	57	I	PF1/AN5	82	I/O	PI4/INT1
8	I/O	PC6/RTO6	33	O	PH5	58	I	PF0/AN4	83	I/O	PI3/TO
9	I/O	PC5/RTO5	34	O	PH4	59	I	AN3	84	I/O	PI2/PWM
10	I/O	PC4/RTO4	35	O	PH3	60	I	AN2	85	I/O	PI1/PO
11	I/O	PC3/RTO3	36	O	PH2	61	I	AN1	86	I	PI0/PCK
12	I/O	PC2/PPO18	37	O	PH1	62	I	AN0	87	I	PK0
13	I/O	PC1/PPO17	38	O	PH0	63	I	PG7/EXI1	88	–	GND
14	I/O	PC0/PPO16	39	O	MP	64	I	PG6/EXI0	89	–	VDD
15	I/O	PJ7	40	I/O	RST	65	I	PG5/SYNC1	90	–	NC
16	I/O	PJ6	41	–	GND	66	I	PG4/SYNC0	91	O	PA7/PPO7
17	I/O	PJ5	42	O	XTAL	67	I	PG3/PBCTL	92	O	PA6/PPO6
18	I/O	PJ4	43	I	EXTAL	68	I	PG2/DPG	93	O	PA5/PPO5
19	I/O	PJ3	44	I	CS0	69	I	PG1/DFG	94	O	PA4/PPO4
20	I/O	PJ2	45	I	SI0	70	I	PG0/CFG	95	O	PA3/PPO3
21	I/O	PJ1	46	O	SO0	71	O	PE7/DAB1	96	O	PA2/PPO2
22	I/O	PJ0	47	I/O	SCK0	72	O	PE6/DAB0	97	O	PA1/PPO1
23	I/O	PD7	48	I/O	PF7/AN11	73	O	PE5/DAA1	98	O	PA0/PPO0
24	I/O	PD6	49	I/O	PF6/AN10	74	O	PE4/DAA0	99	O	PB7/PPO15
25	I/O	PD5	50	I/O	PF5/AN9	75	O	PE3/PWM1	100	O	PB6/PPO14


91 PA7/PPO7
92 PA6/PPO6
93 PA5/PPO5
94 PA4/PPO4
95 PA3/PPO3
96 PA2/PPO2
97 PA1/PPO1
98 PA0/PPO0
99 PB7/PPO15
100 PB6/PPO14
1 PB5/PPO13
2 PB4/PPO12
3 PB3/PPO11
4 PB2/PPO10
5 PB1/PPO9
6 PB0/PPO8
7 PC7/RTO7
8 PC6/RTO6
9 PC5/RTO5
10 PC4/RTO4
11 PC3/RTO3
12 PC2/PPO18
13 PC1/PPO17
14 PC0/PPO16
23 PD7
24 PD6
25 PD5
26 PD4
27 PD3
28 PD2
29 PD1
30 PD0
39 MP
40 RST
42 XTAL
43 EXTAL
44 CS0
45 SI0
46 SO0
47 SCK0
DAB1/PE7 71
DAB0/PE6 72
DAA1/PE5 73
DAA0/PE4 74
PWM1/PE3 75
PWM0/PE2 76
EC/INT2/PE1 77
INT0/PE0 78
EXI1/PG7 63
EXI0/PG6 64
SYNC1/PG5 65
SYNC0/PG4 66
PBCTL/PG3 67
DPG/PG2 68
DPG/PG1 69
DPG/PG0 70
PH7 31
PH6 32
PH5 33
PH4 34
PH3 35
PH2 36
PH1 37
PH0 38
SI1/PI7 79
SO1/PI6 80
SCK1/PI5 81
INT1/PI4 82
TO/PI3 83
PWM/PI2 84
PO/PI1 85
PCK/PI0 86
PJ7 15
PJ6 16
PJ5 17
PJ4 18
PJ3 19
PJ2 20
PJ1 21
PJ0 22
PK0 87
AN11/PF7 48
AN10/PF6 49
AN9/PF5 50
AN8/PF4 51
AN7/PF3 55
AN6/PF2 56
AN5/PF1 57
AN4/PF0 58
AN3 59
AN2 60
AN1 61
AN0 62
AGND 52
AVREF 53
AVDD 54

INPUT

AN0 – AN11	; A-D CONVERTOR'S ANALOG INPUTS
AVREF	; A-D CONVERTOR'S REFERENCE VOLTAGE INPUT
CFG	; CAPSTAN FG INPUT
CS0	; SERIAL INTERFACE CHANNLE 0 SELECT INPUT
DPG,DFG	; DURM PG AND FG INPUTS
EC	; EVENT CONTROL INPUT FOR TIMER/COUNTER
EXI0,EXI1	; FRC CAPTURE UNIT'S EXTERNAL INPUTS
EXTAL	; CRYSTAL CONNECTION OR EXTERNAL CLOCK INPUT FOR SYSTEM CLOCK GENERATOR
INT0 – INT2	; INTERRUPT REQUEST INPUTS (FALLING EDGE ACTIVE)
PBCTL	; PLAYBACK CTL PULSE INPUT
PCK	; PRESCALER'S EXTERNAL CLOCK INPUT
PE0,PE1	; INPUTS OF PORT E (PE2 – PE7 ; OUTPUTS)
PF0 – PF3	; INPUTS OF PORT F (PF4 – PF7 ; OUTPUTS)
PG0 – PG7	; INPUTS OF PORT G
PI0	; INPUT OF PORT I (PI1 – PI7 ; INPUTS/OUTPUTS)
PK0	; INPUT OF PORT K
SI0,SI1	; SERIAL DATA INPUTS (CHANNLE 0 AND CHANNLE 1)
SYNC0,SYNC1	; COMPOSITE SYNC SIGNAL INPUTS

OUTPUT

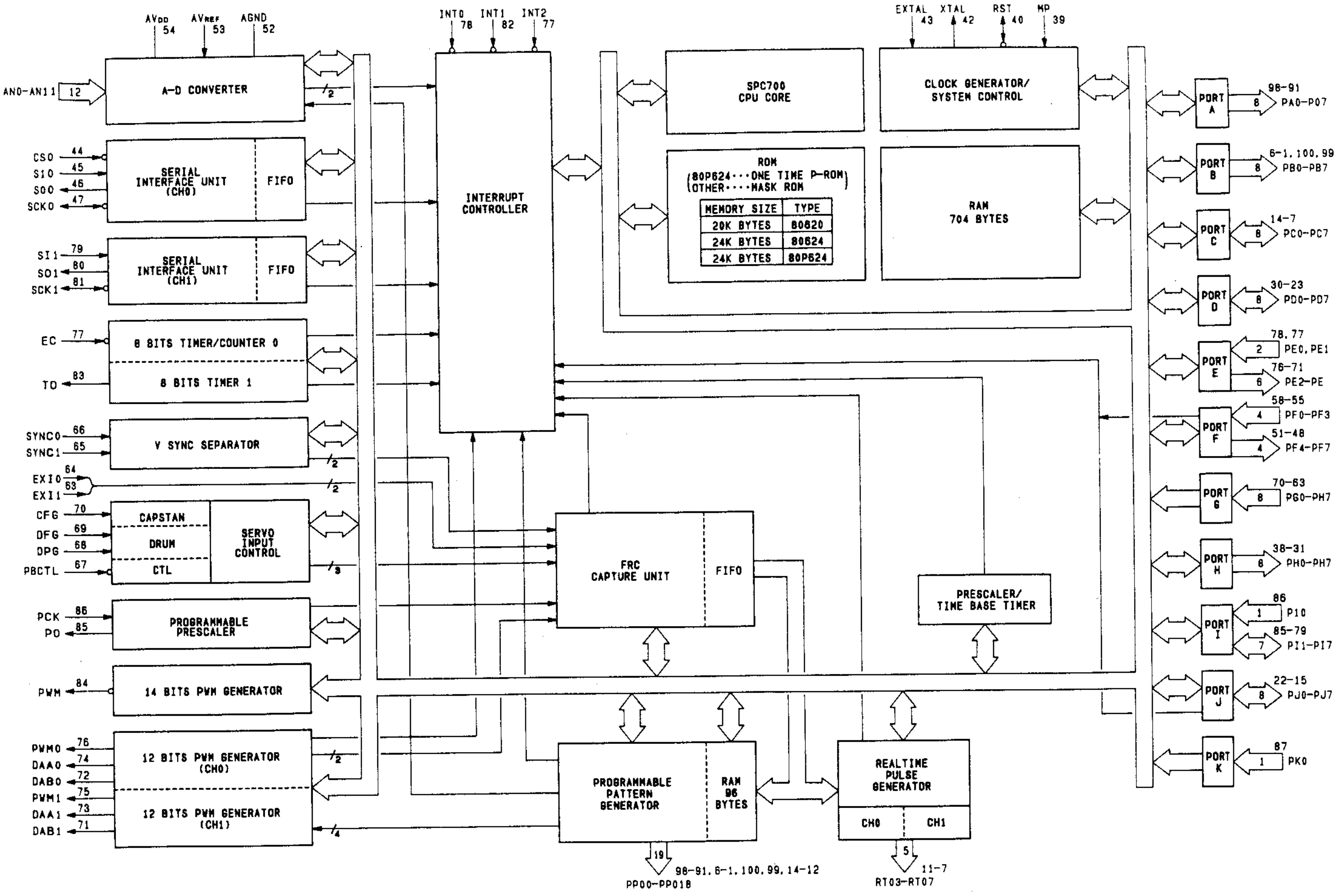
DAA0,DAB0	; DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 0)
DAA1,DAB1	; DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 1)
MP	; MICROPROCESSOR MODE INPUT
PA0 – PA7	; OUTPUTS OF PORT A
PB0 – PB7	; OUTPUTS OF PORT B
PE2 – PE7	; OUTPUTS OF PORT E (PE0, PE1 ; INPUTS)
PF4 – PF7	; OUTPUTS OF PORT F (PF0 – PF3 ; INPUTS)
PH0 – PH7	; OUTPUTS OF PORT H (N-CH OPEN DRAIN OUTPUTS)
PPO0 – PPO18	; PROGRAMMABLE PATTERN GENERATOR OUTPUS
PO	; PRESCALER OUTPUT
PWM	; PULSE WIDTH MODULATION OUTPUT
PWM0,PWM1	; 12 BITS PULSE WIDTH MODULATION OUTPUTS (CHANNLE 0 AND CHANNLE 1)
RTO3 – RTO7	; REALTIME PULSE GENERATOR OUTPUTS
SO0,SO1	; SERIAL DATA OUTPUTS (CHANNLE 0 AND CHANNLE 1)
TO	; TIMER/COUNTER OUTPUT (DUTY 50%)
XTAL	; CRYSTAL CONNECTION

INPUT/OUTPUT

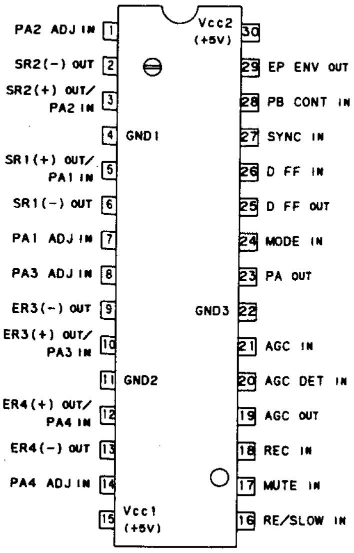
PC0 – PC7	; INPUTS/OUTPUTS OF PROT C (BIT PROGRAMMABLE)
PD0 – PD7	; INPUTS/OUTPUTS OF PROT D (4 BITS PROGRAMMABLE)
PI1 – PI7	; INPUTS/OUTPUTS OF PROT I (BIT PROGRAMMABLE, PI0 ; INPUT)
PJ0 – PJ7	; INPUTS/OUTPUTS OF PROT J (BIT PROGRAMMABLE)
RST	; SYSTEM RESET INPUT AND POWER ON RESET OUTPUT
SCK0,SCK1	; SERIAL CLOCK INPUTS/OUTPUTS (CHANNLE 0 AND CHANNLE 1)

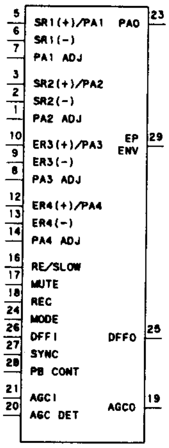
OTHER

AGND	; A-D CONVERTOR'S GROUND
AVDD (+ 5V)	; A-D CONVERTOR'S VDD


AVDD 54
AVREF 53
AGND 52
INT0 78
INT1 82
INT2 77
EXTAL 43
XTAL 42
RST 40
MP 39
AN0-AN11 12
A-D CONVERTER
/2
CS0 44
SI0 45
SO0 46
SCK0 47
SERIAL INTERFACE UNIT (CH0)
FIFO
SI1 79
SO1 80
SCK1 81
SERIAL INTERFACE UNIT (CH1)
FIFO
EC 77
8 BITS TIMER/COUNTER 0
TO 83
8 BITS TIMER 1
SYNC0 66
SYNC1 65
V SYNC SEPARATOR
/2
EXI0 64
EXI1 63
/2
CFG 70
DFG 69
DPG 68
PBCTL 67
CAPSTAN
DRUM
CTL
SERVO INPUT CONTROL
/3
PCK 86
PO 85
PROGRAMMABLE PRESCALER
PWM 84
14 BITS PWM GENERATOR
PWM0 76
DAA0 74
DAB0 72
PWM1 75
DAA1 73
DAB1 71
12 BITS PWM GENERATOR (CH0)
12 BITS PWM GENERATOR (CH1)
/2
/4
INTERRUPT CONTROLLER
SPC700 CPU CORE
ROM
(80P624···ONE TIME P-ROM)
(OTHER····MASK ROM)
MEMORY SIZE | TYPE
20K BYTES | 80620
24K BYTES | 80624
24K BYTES | 80P624
CLOCK GENERATOR/ SYSTEM CONTROL
RAM 704 BYTES
FRC CAPTURE UNIT
FIFO
PRESCALER/ TIME BASE TIMER
PROGRAMMABLE PATTERN GENERATOR
RAM 96 BYTES
19
98-91, 6-1, 100, 99, 14-12
PP00-PP018
REALTIME PULSE GENERATOR
CH0
CH1
5
11-7
RT03-RT07
PORT A
8
98-91
PA0-P07
PORT B
8
6-1, 100, 99
PB0-PB7
PORT C
8
14-7
PC0-PC7
PORT D
8
30-23
PD0-PD7
PORT E
2
78, 77
PE0, PE1
6
76-71
PE2-PE
PORT F
4
58-55
PF0-PF3
4
51-48
PF4-PF7
PORT G
8
70-63
PG0-PH7
PORT H
8
38-31
PH0-PH7
PORT I
1
86
PI0
7
85-79
PI1-PI7
PORT J
8
22-15
PJ0-PJ7
PORT K
1
87
PK0

HA118019NT (HITACHI)
VTR PRE REC AMP
- TOP VIEW -


PA2 ADJ IN 1
SR2(-) OUT 2
SR2(+) OUT/ PA2 IN 3
4 GND1
SR1(+) OUT/ PA1 IN 5
SR1(-) OUT 6
PA1 ADJ IN 7
PA3 ADJ IN 8
ER3(-) OUT 9
ER3(+) OUT/ PA3 IN 10
11 GND2
ER4(+) OUT/ PA4 IN 12
ER4(-) OUT 13
PA4 ADJ IN 14
15 Vcc1 (+5V)
Vcc2 (+5V) 30
29 EP ENV OUT
28 PB CONT IN
27 SYNC IN
26 D FF IN
25 D FF OUT
24 MODE IN
23 PA OUT
GND3 22
21 AGC IN
20 AGC DET IN
19 AGC OUT
18 REC IN
17 MUTE IN
16 RE/SLOW IN


5 SR1(+)/PA1
6 SR1(-)
7 PA1 ADJ
3 SR2(+)/PA2
2 SR2(-)
1 PA2 ADJ
10 ER3(+)/PA3
9 ER3(-)
8 PA3 ADJ
12 ER4(+)/PA4
13 ER4(-)
14 PA4 ADJ
16 RE/SLOW
17 MUTE
18 REC
24 MODE
26 DFF1
27 SYNC
28 PB CONT
21 AGC1
20 AGC DET
PAO 23
EP ENV 29
DFFO 25
AGCO 19

INPUT
AGC1 ;AGC
AGC DET ;AGC DETECT
DFF1 ;DRUM FF
MODE ;MODE CONTROL (L;SP/H;EP)
MUTE ;REC MUTE CONTROL
PA1-PA4 ;PRE AMP CH1-CH4
PA1-PA4 ADJ ;PRE AMP CH1-CH4 ADJUST
PB CONT ;PB CONTROL (MANUAL/AUTO/STILL)
REC ;REC
RE/SLOW ;REC EQ/SLOW CONTROL
SYNC ;SYNC SEPARATE

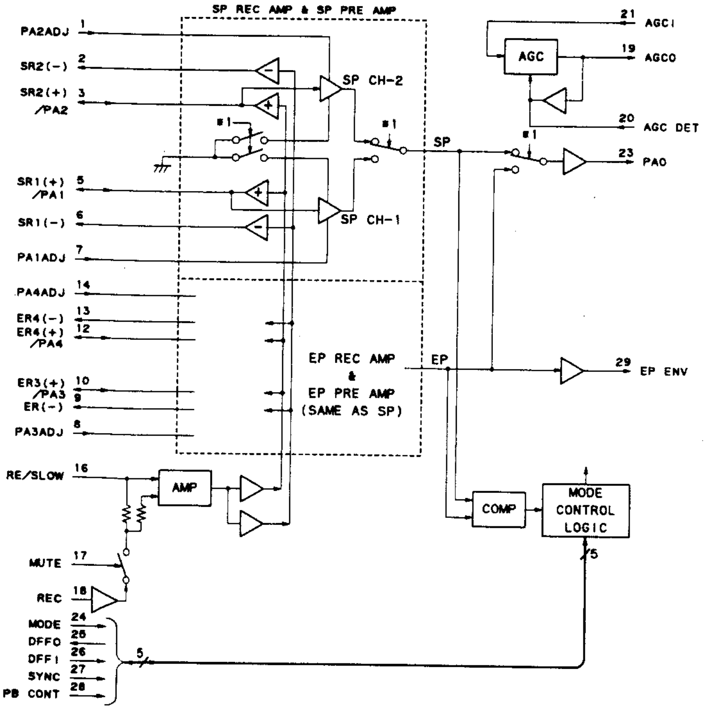
OUTPUT
AGCO ;AGC OUTPUT (PB/REC SELECT)
DFFO ;DRUM FF
EP ENV ;EP ENVELOPE
ER3(+).ER4(+) ;EP REC CH3/CH4(+)
ER3(-).ER4(-) ;EP REC CH3/CH4(-)
PAO ;PRE AMP
SR1(+).SR2(+) ;SP REC CH1/CH2(+)
SR1(-).SR2(-) ;SP REC CH1/CH2(-)

MODE CONTROL

SYMBOL / MODE	DFF1	MODE	PB CONT	RE/ SLOW	DFFO	PAO
SP PB	0	0	1	OPEN	0	CH1
	1	0	1	OPEN	1	CH2
EP PB	0	1	1	OPEN	1	CH4
	1	1	1	OPEN	0	CH3
AUTO	0	–	MIDDLE	OPEN		
	1	–	MIDDLE	OPEN		
SP STILL	0	0	0	OPEN	1	CH4
	1	0	0	OPEN	1	CH2
EP STILL	0	1	0	OPEN	0	CH1
	1	1	0	OPEN	0	CH3
SP SLOW	0	0	0	0	0	CH1
	1	0	0	0	1	CH2
EP SLOW	0	1	0	0	1	CH4
	1	1	0	0	0	CH3

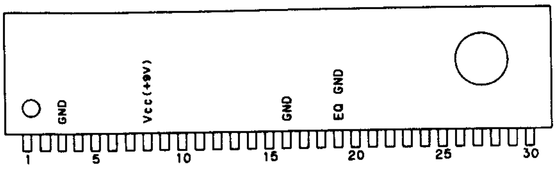
0	CH1
1	CH4
1	CH2
0	CH3

1;HIGH LEVEL
0;LOW LEVEL

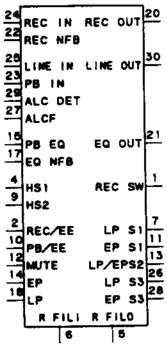

SP REC AMP & SP PRE AMP
PA2ADJ 1
SR2(-) 2
SR2(+) /PA2 3
SP CH-2
#1
SR1(+) /PA1 5
SR1(-) 6
PA1ADJ 7
SP CH-1
PA4ADJ 14
ER4(-) 13
ER4(+) /PA4 12
ER3(+) /PA3 10
ER(-) 9
PA3ADJ 8
EP REC AMP & EP PRE AMP (SAME AS SP)
RE/SLOW 16
AMP
MUTE 17
REC 18
MODE 24
DFFO 25
DFF1 26
SYNC 27
PB CONT 28
5
AGC
21 AGC1
19 AGCO
20 AGC DET
SP
23 PAO
EP
29 EP ENV
COMP
MODE CONTROL LOGIC
5

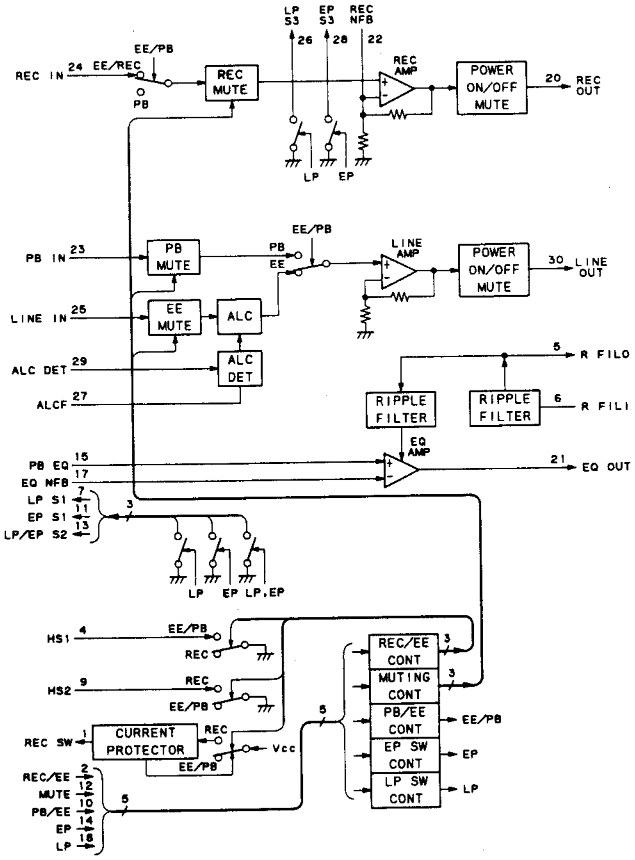
LA7297 (SANYO)

AUDIO SIGNAL REC/PB PROCESSOR
- SIDE VIEW -


GND
Vcc(+9V)
GND
EQ GND
1
5
10
15
20
25
30

PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL
1	O	REC SW	16	—	GND
2	I	REC/EE	17	I	EQ NFB
3	—	GND	18	I	LP
4	I	HS1	19	—	EQ GND
5	O	R FILO	20	O	REC OUT
6	I	R FILI	21	O	EQ OUT
7	O	LP S1	22	I	REC NFB
8	—	Vcc	23	I	PB IN
9	I	HS2	24	I	REC IN
10	I	PB/EE	25	I	LINE IN
11	O	EP S1	26	O	LP S3
12	I	MUTE	27	—	ALCF
13	O	LP/EP S2	28	O	EP S3
14	I	EP	29	I	ALC DET
15	I	PB EQ	30	O	LINE OUT


24 REC IN
REC OUT 20
22 REC NFB
25 LINE IN
LINE OUT 30
23 PB IN
29 ALC DET
27 ALCF
15 PB EQ
EQ OUT 21
17 EQ NFB
4 HS1
REC SW 1
9 HS2
2 REC/EE
LP S1 7
10 PB/EE
EP S1 11
12 MUTE
LP/EPS2 13
14 EP
LP S3 26
18 LP
EP S3 28
R FILI 6
R FILO 5

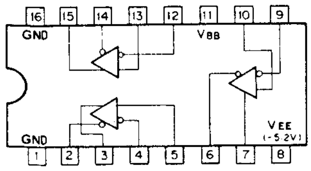

REC IN 24
EE/REC
EE/PB
PB
REC MUTE
LP S3 26
EP S3 28
REC NFB 22
LP
EP
REC AMP
POWER ON/OFF MUTE
20 REC OUT
PB IN 23
PB MUTE
LINE IN 25
EE MUTE
ALC
ALC DET 29
ALC DET
ALCF 27
EE/PB
PB
EE
LINE AMP
POWER ON/OFF MUTE
30 LINE OUT
5 R FILO
RIPPLE FILTER
RIPPLE FILTER
6 R FILI
EQ AMP
PB EQ 15
EQ NFB 17
21 EQ OUT
LP S1 7
EP S1 11
LP/EP S2 13
3
LP
EP
LP, EP
HS1 4
EE/PB
REC
HS2 9
REC
EE/PB
REC SW 1
CURRENT PROTECTOR
REC
EE/PB
Vcc
REC/EE 2
MUTE 12
PB/EE 10
EP 14
LP 18
5
5
REC/EE CONT
MUTING CONT
PB/EE CONT
EP SW CONT
LP SW CONT
3
3
EE/PB
EP
LP

INPUT
ALC DET ;AUTO LIMITER CONTROL DETECTOR
ALCF ;AUTO LIMITER CONTROL FILTER
EP ;EP SWITCH CONTROL
EQ NFB ;PB EQUALIZED NEGATIVE FEEDBACK
HS1.2 ;HEAD SWITCH 1.2
LP ;LP SWITCH CONTROL
LINE IN ;AUDIO LINE
MUTE ;MUTE SWITCH CONTROL
PB/EE ;PB/EE SWITCH CONTROL
PB EQ ;PB EQUALIZED
PB IN ;AUDIO PB LEVEL
REC/EE ;REC/EE SWITCH CONTROL
REC IN ;AUDIO REC LEVEL
REC NFB ;AUDIO REC NEGATIVE FEEDBACK
R FILI ;RIPPLE FILTER

OUTPUT
EP S1-3 ;EP SWITCH
EQ OUT ;PB EQUALIZED
LINE OUT;AUDIO LINE
LP S1-3 ;LP SWITCH
REC OUT ;AUDIO REC LEVEL
REC SW ;REC HEAD VOLTAGE CONTROL SWITCH
R FILO ;RIPPLE FILTER

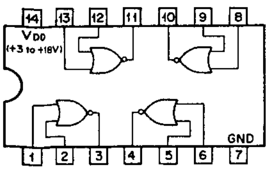
MC10H116M (MOTOROLA) FLAT PACKAGE

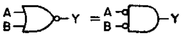
ECL TRIPLE DIFFERENTIAL OR/NOR LINE RECEIVERS
- TOP VIEW -


16
15
14
13
12
11
10
9
GND
VBB
GND
VEE (-5.2V)
1
2
3
4
5
6
7
8

MC14001BF (MOTOROLA) FLAT PACKAGE

C-MOS 2-INPUT NOR GATE
- TOP VIEW -


14
13
12
11
10
9
8
VDD (+3 to +18V)
GND
1
2
3
4
5
6
7



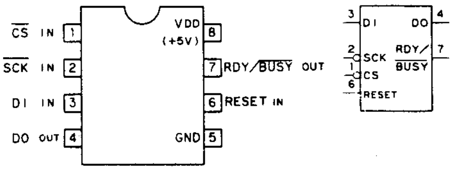
$Y = \overline{A+B} = \overline{A} \cdot \overline{B}$

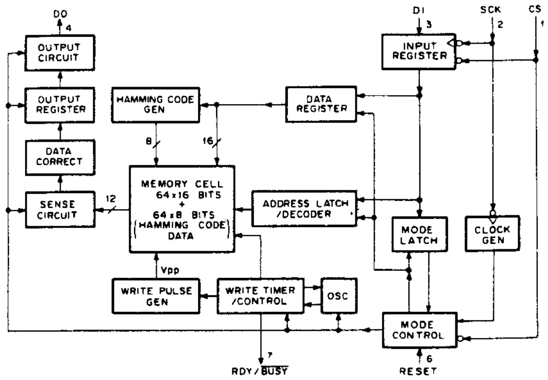
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

0;LOW LEVEL
1;HIGH LEVEL

M6M80011AP (MITSUBISHI)

C-MOS 1k (64x16) BIT ELECTRICALLY ERASABLE PROM
- TOP VIEW -

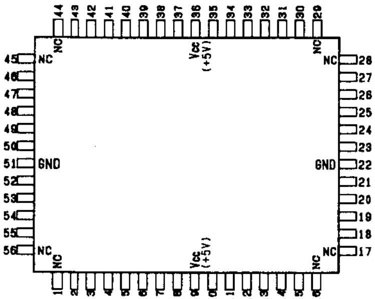

CS IN 1
SCK IN 2
DI IN 3
DO OUT 4
VDD (+5V) 8
7 RDY/BUSY OUT
6 RESET IN
GND 5
3 DI
DO 4
2 SCK
RDY/BUSY 7
1 CS
6 RESET


DO
4
OUTPUT CIRCUIT
OUTPUT REGISTER
DATA CORRECT
SENSE CIRCUIT
12
HAMMING CODE GEN
8
16
MEMORY CELL 64x16 BITS + 64x8 BITS (HAMMING CODE DATA)
VPP
WRITE PULSE GEN
WRITE TIMER /CONTROL
OSC
7
RDY/BUSY
DI
3
SCK
2
CS
1
INPUT REGISTER
DATA REGISTER
ADDRESS LATCH /DECODER
MODE LATCH
CLOCK GEN
MODE CONTROL
6
RESET

CS : CHIP SELECT INPUT
DI : DATA INPUT
DO : DATA OUTPUT
RDY/BUSY : BUSY OUTPUT
RESET : RESET INPUT
SCK : CLOCK INPUT

M52059AFP (MITSUBISHI)

– TOP VIEW –


NC
Vcc (+5V)
GND
NC
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
45 46 47 48 49 50 51 52 53 54 55 56

(Vcc = + 5V)

PIN No.	I/O	SYMBOL	PIN No.	I/O	SYMBOL	PIN No.	I/O	SYMBOL
1	–	NC	20	I	REC ACC	39	I	HSS
2	I	MAIN BM	21	I	P/S/N SW	40	–	MMV TIM
3	I	ROTARY SW	22	–	GND	41	O	SUB BM
4	I	P/B P ADJ	23	I	VCO ADJ	42	O	HP
5	I	MAIN BM BP	24	–	B ACC F	43	O	P/B DET
6	O	SW2	25	–	REC AFC F	44	–	NC
7	O	ACC	26	I	B ADJ	45	–	NC
8	I	ACC	27	–	B ERR DET HPF	46	O	BGP
9	–	Vcc	28	–	NC	47	I	2/4/6 SW
10	I	REC C	29	–	NC	48	I	R/T/P SW
11	I	SUB BM BP	30	I	P/B G ADJ	49	O	PB OUT AMP
12	O	SW1	31	O	S/L DET	50	I	CPS/CPN/VHS SW
13	I	PB LOW C	32	–	PB APC F	51	–	GND
14	I	REC OUT AMP	33	–	REC APC F	52	I	COMB AMP
15	O	REC LOW C	34	O	VCXO 1	53	–	KILLER REF
16	–	NC	35	O	VCXO 2	54	O	COMB DRIVE
17	–	NC	36	–	Vcc	55	–	KILLER F
18	I	PB ACC	37	I	VCXO	56	–	NC
19	–	C ACC F	38	–	P/B DET F			

INPUT

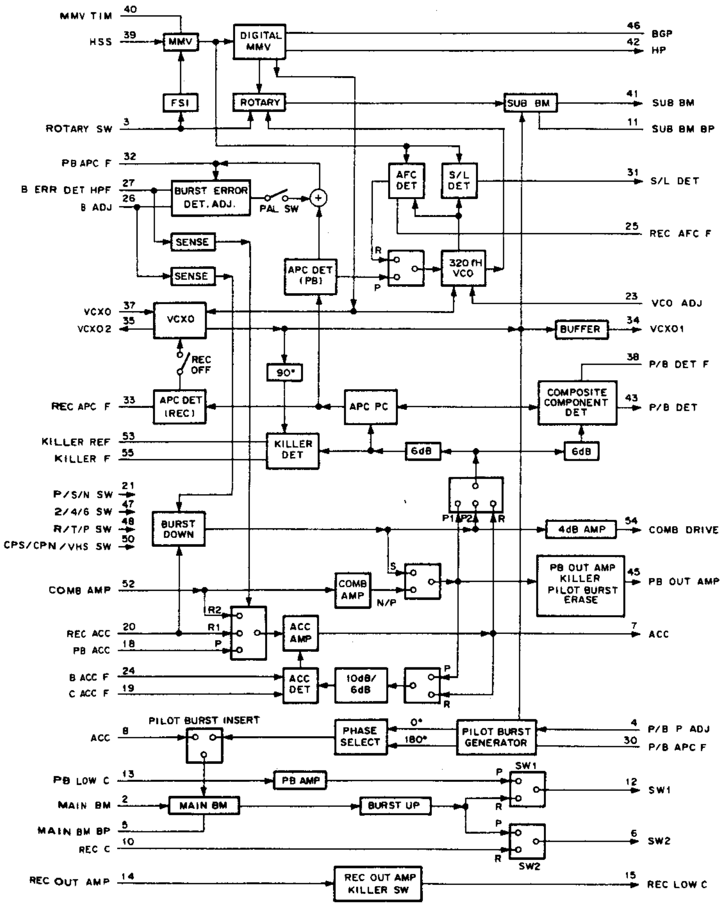
2/4/6 SW ; 2H/4H/6H SWITCH CONTROL
ACC ; ACC OUTPUT
B ADJ ; BURST ADJUST
COMB AMP ; COMB AMPLIFIER
CPS/CPN/VHS SW ; COMPSITE/COMPONENT/VHS SWITCH CONTROL
HSS ; HORIZONTAL SYNC SIGNAL
MAIN BM ; MAIN BALANCED MODULATOR
MAIN BM BP ; MAIN BALANCED MODULATOR BYPASS CONTROL
P/B G ADJ ; PILOT BURST GAIN ADJUST
P/B P ADJ ; PILOT BURST PHASE ADJUST
P/S/N SW ; PAL/SECAM/NTSC SWITCH CONTROL
PB ACC ; AUTOMATIC COLOR CONTROL AMPLIFIER FOR PB
PB LOW C ; PB LOW RESONANCE CHROMA
R/T/P SW ; REC/TRICK/PB SWITCH CONTROL
REC ACC ; AUTOMATIC COLOR CONTROL AMPLIFIER FOR REC
REC C ; REC CHROMA SIGNAL
REC OUT AMP ; REC SIGNAL OUTPUT AMPLIFIER
ROTARY SW ; ROTATION SWITCH CONTROL
SUB BM BP ; SUB BALANCED MODULATOR BYPASS CONTROL
VCO ADJ ; 320 fH VCO ADJUST
VCXO ; VOLTAGE CONTROLED CRYSTAL OSCILLATOR

OUTPUT

ACC ; AUTOMATIC COLOR CONTROL AMPLIFITER
BGP ; BURST GATE PULSE
COMB DRIVE ; COMB DRIVE
HP ; HORIZONTAL PULSE
P/B DET ; PILOT BURST DETECTTION
PB OUT AMP ; PB SIGNAL OUTPUT AMPLIFIER
REC LOW C ; REC LOW RESONANCE CHROMA
S/L DET ; SIDE LOCK DETECTION
SUB BM ; SUB BALANCED MODULATOR
SW1 ; SWITCH 1
SW2 ; SWITCH 2
VCXO 1 ; BUFFERED VCXO
VCXO 2 ; VOLTAGE CONTROLED CRYSTAL OSCILLATOR

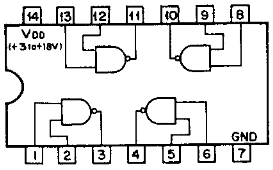
OTHER

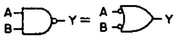
B ACC F ; AUTOMATIC COLOR CONTROL FILTER FOR BURST
B ERR DET HPF ; BURST ERROR DETECT HIGH-PASS FILTER
C ACC F ; AUTOMATIC COLOR CONTROL FILTER FOR CHROMA
KILLER F ; COLOR KILLER FILTER
KILLER REF ; COLOR KILLER REFERENCE FILTER
MMV TIM ; MONOSTABLE MULTIVIBRATOR TIMING TIME CONSTANT
P/B DET F ; PILOT BURST DETECTION FILTER
PB APC F ; AUTOMATIC FREQUENCY CONTROL FILTER FOR PB
REC AFC F ; AUTOMATIC FREQUENCY CONTROL FILTER FOR REC
REC APC F ; AUTOMATIC PHASE CONTROL FILTER FOR REC


MMV TIM 40
HSS 39
MMV
DIGITAL MMV
46 BGP
42 HP
FSI
ROTARY
SUB BM
41 SUB BM
11 SUB BM BP
ROTARY SW 3
PB APC F 32
B ERR DET HPF 27
B ADJ 26
BURST ERROR DET. ADJ.
PAL SW
AFC DET
S/L DET
31 S/L DET
25 REC AFC F
SENSE
SENSE
APC DET (PB)
R
P
320 fH VCO
23 VCO ADJ
VCXO 37
VCXO2 35
VCXO
BUFFER
34 VCXO1
REC OFF
90°
38 P/B DET F
REC APC F 33
APC DET (REC)
APC PC
COMPOSITE COMPONENT DET
43 P/B DET
KILLER REF 53
KILLER F 55
KILLER DET
6dB
6dB
P/S/N SW 21
2/4/6 SW 47
R/T/P SW 48
CPS/CPN/VHS SW 50
BURST DOWN
P1 P2 R
4dB AMP
54 COMB DRIVE
S
COMB AMP 52
COMB AMP
N/P
PB OUT AMP KILLER PILOT BURST ERASE
45 PB OUT AMP
R2
R1
P
REC ACC 20
PB ACC 18
ACC AMP
7 ACC
B ACC F 24
C ACC F 19
ACC DET
10dB/6dB
P
R
PILOT BURST INSERT
ACC 8
PHASE SELECT
0°
180°
PILOT BURST GENERATOR
4 P/B P ADJ
30 P/B APC F
PB LOW C 13
PB AMP
SW1
P
R
12 SW1
MAIN BM 2
MAIN BM
BURST UP
MAIN BM BP 5
REC C 10
P
R
SW2
6 SW2
REC OUT AMP 14
REC OUT AMP KILLER SW
15 REC LOW C

MC14011BF (MOTOROLA) FLAT PACKAGE

C-MOS 2-INPUT NAND GATE
- TOP VIEW -


14
13
12
11
10
9
8
VDD
(+3 to+18V)
GND
1
2
3
4
5
6
7



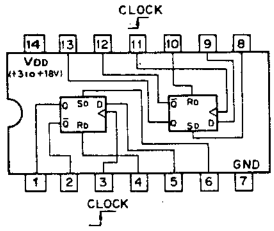
$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0:LOW LEVEL
1:HIGH LEVEL

HD14013BP (HITACHI)
MC14013BCP (MOTOROLA)
MC14013BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
- TOP VIEW -


CLOCK
14
13
12
11
10
9
8
VDD
(+3 to +18V)
Q
SD
D
Q̄
RD
Q̄
RD
Q
SD
D
GND
1
2
3
4
5
6
7
CLOCK

DIRECT R-S FLIP-FLOP

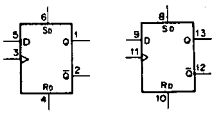
SD	RD	Q	Q̄
0	0	Qn	Q̄n
0	1	0	1
1	0	1	0
1	1	1	1

D-TYPE FLIP-FLOP

CKn	CKn+1
D	Q
0	0
1	1

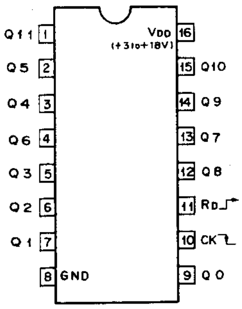
0:LOW LEVEL
1:HIGH LEVEL

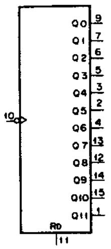
CLOCK CK; ⎍
CKn; BEFORE CLOCK
CKn+1; AFTER CLOCK

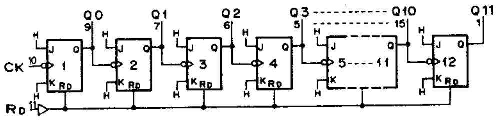

6
SD
5
D
Q
1
3
Q̄
2
RD
4
8
SD
9
D
13
11
Q̄
12
RD
10

MC14040BF (MOTOROLA) FLAT PACKAGE

C-MOS 12-STAGE RIPPLE CARRY BINARY COUNTER/DRIVER
- TOP VIEW -


Q11 1
Q5 2
Q4 3
Q6 4
Q3 5
Q2 6
Q1 7
8 GND
VDD 16
(+3 to+18V)
15 Q10
14 Q9
13 Q7
12 Q8
11 RD
10 CK
9 Q0


Q0 9
Q1 7
Q2 6
Q3 5
Q4 3
Q5 2
Q6 4
Q7 13
Q8 12
Q9 14
Q10 15
Q11 1
10
RD
11


Q0
Q1
Q2
Q3
Q10
Q11
9
7
6
5
15
1
CK
10
RD
11
J
K
RD
Q
H
1
2
3
4
5----11
12

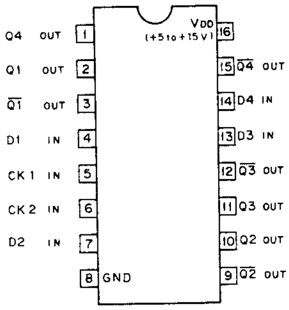
COUNT	Q11	Q10	Q9	Q8	Q7	Q6	Q5	Q4	Q3	Q2	Q1	Q0
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	1	0
3	0	0	0	0	0	0	0	0	0	0	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
4095	1	1	1	1	1	1	1	1	1	1	1	1

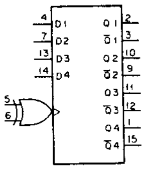
RD	Q11--------Q0
1	ALL LOW
0	COUNT

0; LOW LEVEL
1; HIGH LEVEL

MC14042BCP (MOTOROLA)

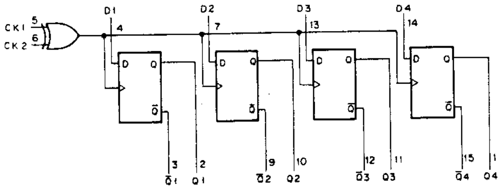
C-MOS D-TYPE LATCH
- TOP VIEW -


Q4 OUT 1
Q1 OUT 2
Q̄1 OUT 3
D1 IN 4
CK1 IN 5
CK2 IN 6
D2 IN 7
8 GND
VDD (+5 to +15V) 16
15 Q̄4 OUT
14 D4 IN
13 D3 IN
12 Q̄3 OUT
11 Q3 OUT
10 Q2 OUT
9 Q̄2 OUT


4 D1
7 D2
13 D3
14 D4
5
6
Q1 2
Q̄1 3
Q2 10
Q̄2 9
Q3 11
Q̄3 12
Q4 1
Q̄4 15

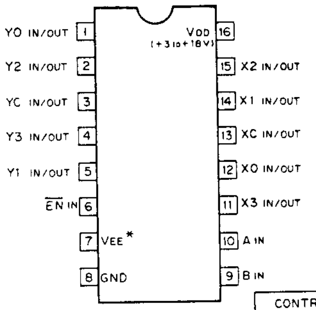
FUNCTION TABLE

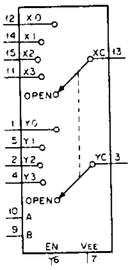
CK1	CK2	Q / Q̄
0	0	PASS DATA
0	1	LATCH DATA
1	0	LATCH DATA
1	1	PASS DATA


CK1 5
CK2 6
D1 4
D2 7
D3 13
D4 14
D
Q
Q̄
3 Q̄1
2 Q1
9 Q̄2
10 Q2
12 Q̄3
11 Q3
15 Q̄4
1 Q4

MC14052BCP (MOTOROLA)
MC14052BF (MOTOROLA) FLAT PACKAGE
TC4052BFHB (TOSHIBA) FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
- TOP VIEW -


Y0 IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to+18V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 X0 IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN


12 X0
14 X1
15 X2
11 X3
XC 13
OPEN
1 Y0
5 Y1
2 Y2
4 Y3
YC 3
OPEN
10 A
9 B
EN 6
VEE 7

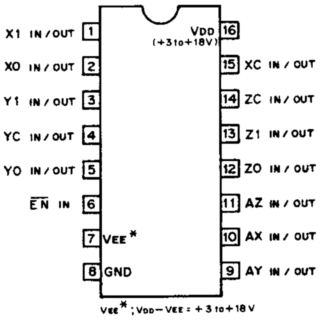
VEE*; VDD−VEE = +3 to +18V

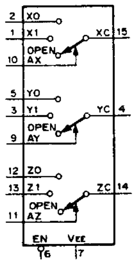
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

MC14053BCP (MOTOROLA)

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
- TOP VIEW -


X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to+18V) 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT


2 X0
1 X1
10 AX
OPEN
XC 15
5 Y0
3 Y1
9 AY
OPEN
YC 4
12 Z0
13 Z1
11 AZ
OPEN
ZC 14
EN 6
VEE 7

VEE*; VDD−VEE = +3 to+18V

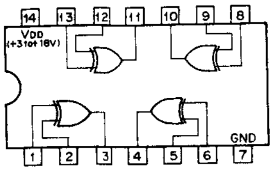
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

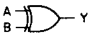
CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN

MC14070BCP (MOTOROLA)

C-MOS QUAD EXCLUSIVE OR GATES

- TOP VIEW -


14
13
12
11
10
9
8
VDD
(+3 to 18V)
GND
1
2
3
4
5
6
7



$Y = \bar{A}\cdot B + A\cdot\bar{B}$

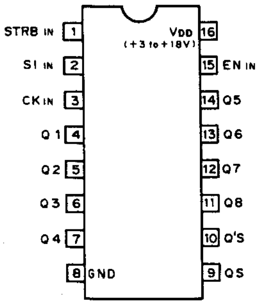
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

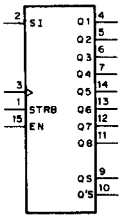
0 ; LOW LEVEL
1 ; HIGH LEVEL

MC14094BCP (MOTOROLA)

C-MOS 8-STAGE SHIFT-AND-STORE BUS REGISTER

- TOP VIEW -


STRB IN 1
SI IN 2
CK IN 3
Q 1 4
Q 2 5
Q 3 6
Q 4 7
8 GND
VDD 16
(+3 to +18V)
15 EN IN
14 Q5
13 Q6
12 Q7
11 Q8
10 Q'S
9 QS


2
SI
3
1
STRB
15
EN
Q1 4
Q2 5
Q3 6
Q4 7
Q5 14
Q6 13
Q7 12
Q8 11
QS 9
Q'S 10

SI ; SERIAL DATA INPUT
CK ; CLOCK INPUT
STRB ; STROBE INPUT
EN ; OUTPUT ENABLE INPUT
Q1 – Q8 ; PARALLEL DATA OUTPUTS
QS, Q'S ; SERIAL DATA OUTPUTS

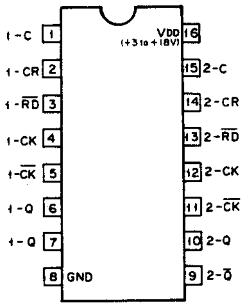
INPUTS				PARALLEL OUT		SERIAL OUT	
CK	EN	STRB	SI	Q1	Qn	QS	Q'S
↑	0	X	X	HI-Z	HI-Z	Q7	NC
↓	0	X	X	HI-Z	HI-Z	NC	Q7
↑	1	0	X	NC	NC	Q7	NC
↑	1	1	0	0	Qn-1	Q7	NC
↑	1	1	1	1	Qn-1	Q7	NC
↓	1	1	1	NC	NC	NC	Q7

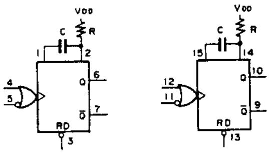
1 ; HIGH HI-Z ; HIGH IMPEDANCE
0 ; LOW NC ; NO CHANGE
X ; DON'T CARE

MC14538BCP (MOTOROLA)
MC14538BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS

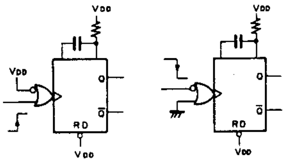
- TOP VIEW -


1-C 1
1-CR 2
1-RD 3
1-CK 4
1-CK 5
1-Q 6
1-Q 7
8 GND
VDD 16
(+3 to +18V)
15 2-C
14 2-CR
13 2-RD
12 2-CK
11 2-CK
10 2-Q
9 2-Q̄

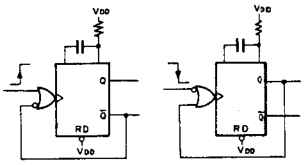

VDD
C
R
1
2
4
5
Q
6
Q̄
7
RD
3
VDD
C
R
15
14
12
11
Q
10
Q̄
9
RD
13

OUTPUT PULSE WIDTH = C·R

RETRIGGERABLE M.M.V


VDD
VDD
Q
Q̄
RD
VDD
VDD
Q
Q̄
RD
VDD

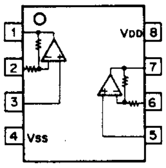
NON-RETRIGGERABLE M.M.V


VDD
Q
Q̄
RD
VDD
VDD
Q
Q̄
RD
VDD

MC14576BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL VIDEO AMPLIFIERS

- TOP VIEW -

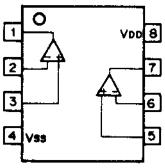

1
2
3
4
Vss
VDD 8
7
6
5

※$V_{DD} + |V_{SS}| = +5V$ to $+12V$

MC14577BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL VIDEO AMPLIFIERS

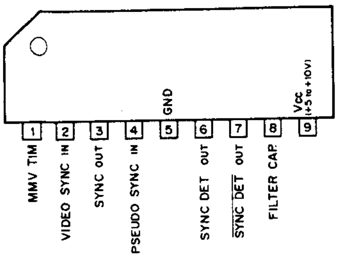
- TOP VIEW -

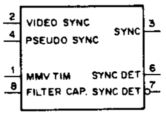

1
2
3
4
Vss
VDD 8
7
6
5

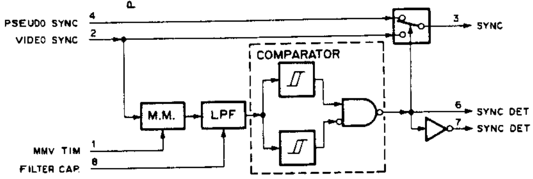
※$V_{DD} + |V_{SS}| = +5V$ to $+12V$

NJM2220S (JRC)

VIDEO SYNC DETECTOR
- SIDE VIEW -

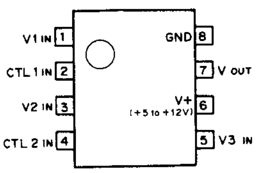

GND
Vcc (+5 to +10V)
1
2
3
4
5
6
7
8
9
MMV TIM
VIDEO SYNC IN
SYNC OUT
PSEUDO SYNC IN
SYNC DET OUT
SYNC DET OUT
FILTER CAP

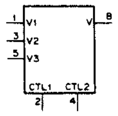

2
4
1
8
3
6
7
VIDEO SYNC
PSEUDO SYNC
SYNC
MMV TIM
FILTER CAP.
SYNC DET
SYNC DET

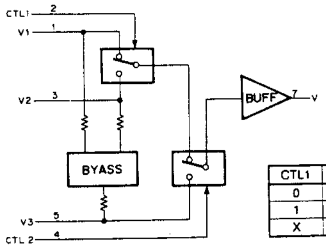

PSEUDO SYNC 4
VIDEO SYNC 2
3 SYNC
COMPARATOR
M.M.
LPF
6 SYNC DET
7 SYNC DET
MMV TIM 1
FILTER CAP. 8

NJM2234M (JRC) FLAT PACKAGE

3-INPUT VIDEO SIGNAL SWITCH
- TOP VIEW -


V1 IN 1
CTL 1 IN 2
V2 IN 3
CTL 2 IN 4
GND 8
7 V OUT
V+ (+5 to +12V) 6
5 V3 IN


1 V1
3 V2
5 V3
V 8
CTL1
CTL2
2
4

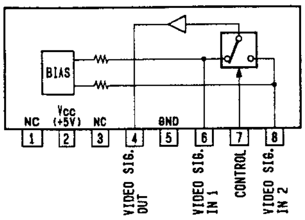

CTL1 2
V1 1
V2 3
BUFF
7 V
BYASS
V3 5
CTL 2 4

CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

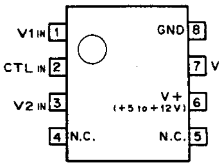
NJM2233BL (JRC)

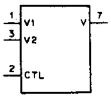
VIDEO SWITCH
- SIDE VIEW -

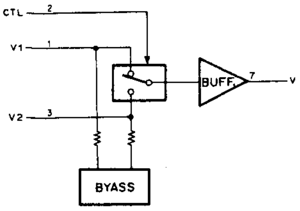

BIAS
NC
Vcc (+5V)
NC
GND
1
2
3
4
5
6
7
8
VIDEO SIG. OUT
VIDEO SIG. IN 1
CONTROL
VIDEO SIG. IN 2

NJM2233BM (JRC) FLAT PACKAGE

2-INPUT VIDEO SIGNAL SWITCH
- TOP VIEW -


V1 IN 1
CTL IN 2
V2 IN 3
4 N.C.
GND 8
7 V OUT
V+ (+5 to +12V) 6
N.C. 5


1 V1
3 V2
2 CTL
V 7

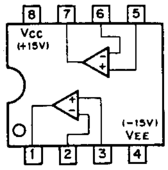

CTL 2
V1 1
V2 3
BUFF
7 V
BYASS

CTL	V
0	V1
1	V2

0 : LOW LEVEL
1 : HIGH LEVEL

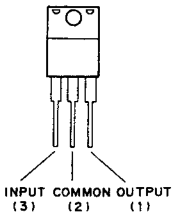
NJM4558D-D (JRC)
NJM4560D (JRC)
NJM4560M (JRC) FLAT PACKAGE
NJM4560MD (JRC) FLAT PACKAGE
NJM5532M (JRC) FLAT PACKAGE
RC4558DD (RAYTHEON)
RC4560D (RAYTHEON)
RC5532M (RAYTHEON) FLAT PACKAGE

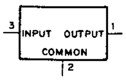
DUAL OPERATIONAL AMPLIFIER
- TOP VIEW -


8
7
6
5
Vcc (+15V)
(-15V) VEE
1
2
3
4

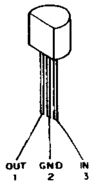
NJM7809FA (JRC) + 9V

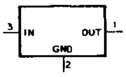
POSITIVE VOLTAGE REGULATOR
- FRONT VIEW -


INPUT (3)
COMMON (2)
OUTPUT (1)

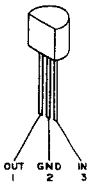

3
INPUT
OUTPUT
1
COMMON
2

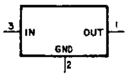
NJM78L05A (JRC) + 5V (100mA)
RC78L09A (RAYTHEON) + 9V (100mA)
POSITIVE VOLTAGE REGULATOR


OUT
GND
IN
1
2
3

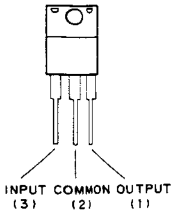

3
IN
OUT
1
GND
2

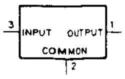
NJM78L09A (JRC) + 9V (100mA)
POSITIVE VOLTAGE REGULATOR


OUT
GND
IN
1
2
3

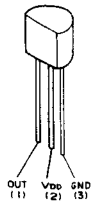

3
IN
OUT
1
GND
2

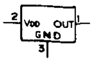
RC7809FA (RAYTHEON) + 9V
POSITIVE VOLTAGE REGULATOR
- FRONT VIEW -


INPUT
COMMON
OUTPUT
(3)
(2)
(1)

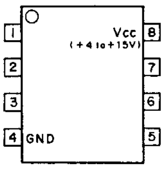

3
INPUT
OUTPUT
1
COMMON
2

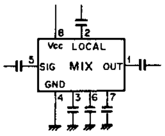
S-8054HNM (SEIKO I AND E) 4.50V – 4.70V
C-MOS VOLTAGE DETECTOR


OUT
VDD
GND
(1)
(2)
(3)

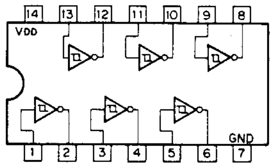

2
VDD
OUT
1
GND
3

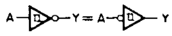
SN16913P (TI)
BALANCED MIXER
- TOP VIEW -


Vcc
(+4 to +15V)
GND
1
2
3
4
5
6
7
8


8
2
Vcc
LOCAL
5
SIG
MIX
OUT
1
GND
4
3
6
7

SN74HC14AN (TI)
C-MOS HEX SCHMITT TRIGGER INVERTERS
- TOP VIEW -

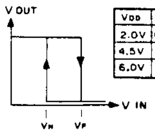

14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

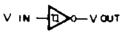


Y = $\bar{A}$

A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL



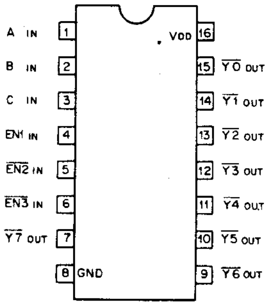


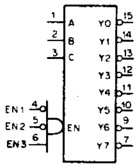
VDD	V_N	V_P
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

NOTE

TYPE	VDD
TC74AC14 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC138AN (TI)
C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER
- TOP VIEW -


A IN
B IN
C IN
$\overline{EN1}$ IN
$\overline{EN2}$ IN
EN3 IN
$\overline{Y7}$ OUT
GND
VDD
$\overline{Y0}$ OUT
$\overline{Y1}$ OUT
$\overline{Y2}$ OUT
$\overline{Y3}$ OUT
$\overline{Y4}$ OUT
$\overline{Y5}$ OUT
$\overline{Y6}$ OUT
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9


1
A
2
B
3
C
EN1
4
EN2
5
EN3
6
EN
Y0
15
Y1
14
Y2
13
Y3
12
Y4
11
Y5
10
Y6
9
Y7
7

INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

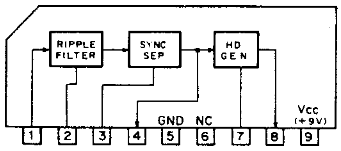
EN = $\overline{EN1} \cdot \overline{EN2} \cdot EN3$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

NOTE :

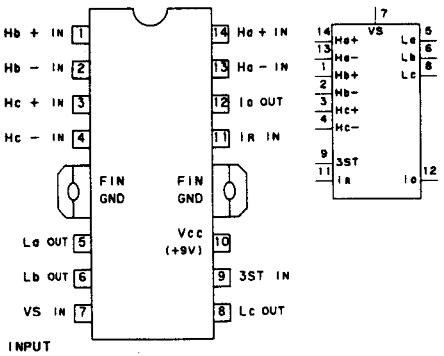
TYPE	VDD
74HCT138 TYPE	+5V
74ACT138 TYPE	+4.5 to +5.5V
TC74AC138 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

TA7357AP (TOSHIBA)
SYNC SEPARATOR/HD PULSE GENERATOR
- SIDE VIEW -


RIPPLE FILTER
SYNC SEP
HD GEN
GND
NC
Vcc
(+9V)
1
2
3
4
5
6
7
8
9

TA7262P-LB (TOSHIBA)

MOTOR DRIVER FOR DIRECT CURRENT COMPACT MOTOR
- TOP VIEW -

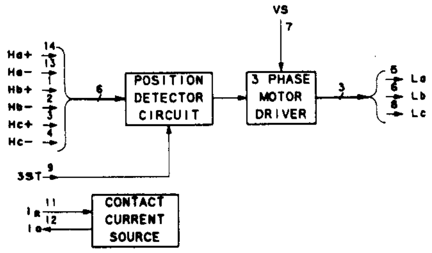

Hb + IN 1
Hb − IN 2
Hc + IN 3
Hc − IN 4
FIN GND
FIN GND
La OUT 5
Lb OUT 6
VS IN 7
14 Ha + IN
13 Ha − IN
12 Io OUT
11 IR IN
Vcc (+9V) 10
9 3ST IN
8 Lc OUT
7 VS
Ha+ Ha− Hb+ Hb− Hc+ Hc−
La Lb Lc
3ST
IR
Io

INPUT

3ST	;MOTOR ROTATIONAL DIRECTION CONTROL
Ha.Hb.Hc +/-	;HOLE ELEMENT AMP
IR	;CONTACT CURRENT SOURCE
VS	;MOTOR INPUT VOLTAGE

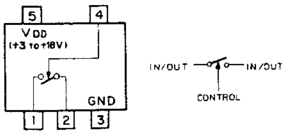
OUTPUT

Io	;CONTACT CURRENT SOURCE
La.Lb.Lc	;3 PHASE MOTOR DRIVE


VS
7
Ha+ Ha− Hb+ Hb− Hc+ Hc−
14 13 1 2 3 4
6
POSITION DETECTOR CIRCUIT
3 PHASE MOTOR DRIVER
3
5 La
6 Lb
8 Lc
3ST 9
IR 11
Io 12
CONTACT CURRENT SOURCE

TC4S66F (TOSHIBA)

C-MOS BILATERAL ANALOG SWITCH
- TOP VIEW -

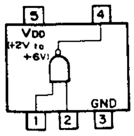

5
4
VDD (+3 to +18V)
GND
1 2 3
IN/OUT
IN/OUT
CONTROL

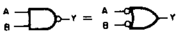
CONTROL	SWITCH
0	OFF
1	ON

0; LOW LEVEL
1; HIGH LEVEL

TC7S00F (TOSHIBA) FLAT PACKAGE
SC7S00F (MOTOROLA) FLAT PACKAGE

C-MOS 2-INPUT NAND GATE
- TOP VIEW -


5
4
VDD (+2V to +6V)
GND
1 2 3



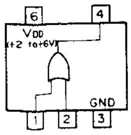
$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

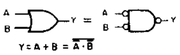
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7S32F (TOSHIBA) FLAT PACKAGE
SC7S32F (MOTOROLA) FLAT PACKAGE

C-MOS 2-INPUT OR GATE
- TOP VIEW -


6
4
VDD (+2 to +6V)
GND
1 2 3



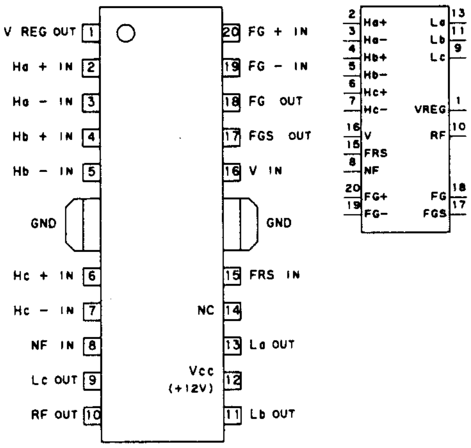
$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 , LOW LEVEL
1 , HIGH LEVEL

TA8424F (TOSHIBA)

MOTOR DRIVER FOR DIRECT CURRENT COMPACT MOTOR
- TOP VIEW -

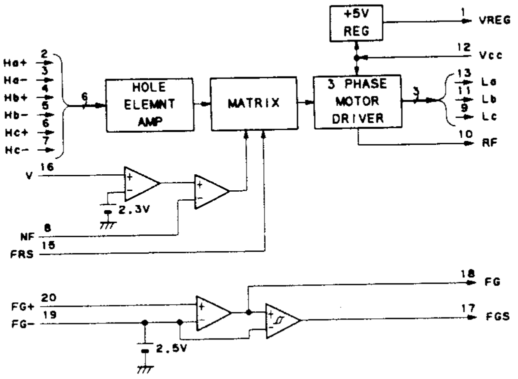

V REG OUT 1
Ha + IN 2
Ha − IN 3
Hb + IN 4
Hb − IN 5
GND
Hc + IN 6
Hc − IN 7
NF IN 8
Lc OUT 9
RF OUT 10
20 FG + IN
19 FG − IN
18 FG OUT
17 FGS OUT
16 V IN
GND
15 FRS IN
NC 14
13 La OUT
Vcc (+12V) 12
11 Lb OUT
Ha+ Ha− Hb+ Hb− Hc+ Hc−
V FRS NF FG+ FG−
La Lb Lc VREG RF FG FGS

INPUT

FG +/-	;FG INPUT AMP
FRS	;MOTOR ROTATIONAL DIRECTION CONTROL
Ha.Hb.Hc +/-	;HOLE ELEMENT AMP
NF	;FEEDBACK OUTPUT CURRENT
V	;CONTROL VOLTAGE

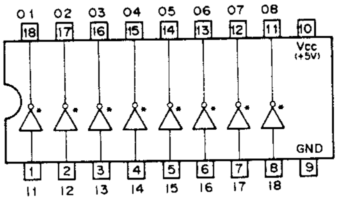
OUTPUT

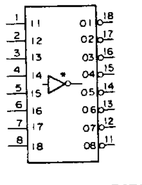
FG	;FG GAIN AMP
FGS	;FG HYSTERESIS AMP
La.Lb.Lc	;3 PHASE MOTOR DRIVE
RF	;OUTPUT CURRENT DETECTOR
V REG	;VOLTAGE REGULATOR


+5V REG
1 VREG
12 Vcc
Ha+ Ha− Hb+ Hb− Hc+ Hc−
2 3 4 5 6 7
6
HOLE ELEMNT AMP
MATRIX
3 PHASE MOTOR DRIVER
3
13 La
11 Lb
9 Lc
10 RF
V 16
2.3V
NF 8
FRS 15
FG+ 20
FG− 19
2.5V
18 FG
17 FGS

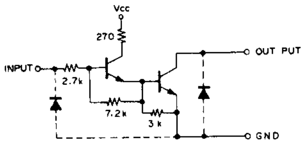
TD62381P (TOSHIBA)

OCTAL LOW SATURATION DRIVER
- TOP VIEW -


O1 O2 O3 O4 O5 O6 O7 O8
18 17 16 15 14 13 12 11 10
Vcc (+5V)
GND
1 2 3 4 5 6 7 8 9
I1 I2 I3 I4 I5 I6 I7 I8

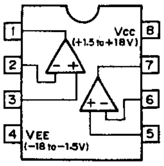

1 I1 O1 18
2 I2 O2 17
3 I3 O3 16
4 I4 O4 15
5 I5 O5 14
6 I6 O6 13
7 I7 O7 12
8 I8 O8 11

*; OPEN COLLECTOR


Vcc
270
INPUT
2.7k
7.2k
3k
OUT PUT
GND

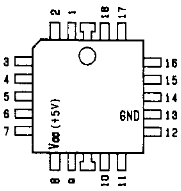
TL082CPS (TI) FLAT PACKAGE

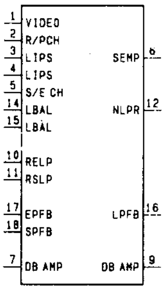
OPERATIONAL AMPLIFIER
(JFET INPUT)
– TOP VIEW –


1
2
3
4
8
7
6
5
Vcc
(+1.5 to +18V)
VEE
(−18 to −1.5V)

VC2076MP (JVC)

Y SIGNAL PROCESSOR FOR VTR
– TOP VIEW –

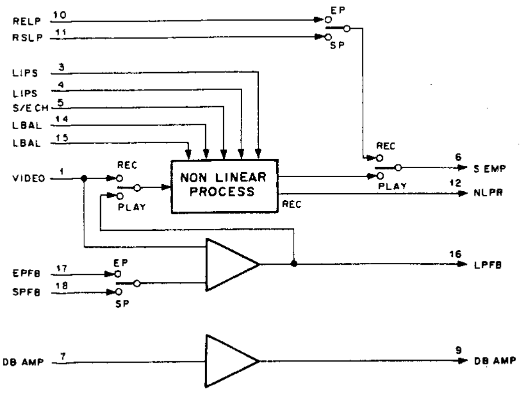

2
1
18
17
3
4
5
6
7
16
15
14
13
12
8
9
10
11
Vcc (+5V)
GND


1 VIDEO
2 R/PCH
3 LIPS
4 LIPS
5 S/E CH
14 LBAL
15 LBAL
10 RELP
11 RSLP
17 EPFB
18 SPFB
7 DB AMP
SEMP 6
NLPR 12
LPFB 16
DB AMP 9

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	VIDEO	10	I	RELP
2	I	R/P CH	11	I	RSLP
3	I	LIPS	12	O	NLPR
4	I	LIPS	13	–	GND
5	I	S/E CH	14	I	LBAL
6	O	S EMP	15	I	LBAL
7	I	DB AMP	16	O	LPFB
8	–	Vcc	17	I	EPFB
9	O	DB AMP	18	I	SPFB

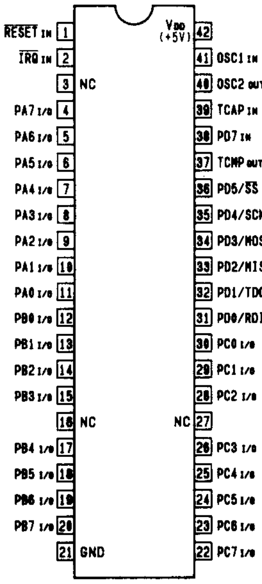
INPUT
DB AMP : 6dB AMP IN
EPFB : PB EP LINEAR PROCESS FEEDBACK
LBAL : LIMITER BALANCE TERMINAL
LIPS : LIMITER POWER SMOOTHING TERMINAL
R/P CH : REC/PB CHANGE
RELP : REC EP LINEAR PROCESS
RSLP : REC SP LINEAR PROCESS
S/E CH : SP/EP CHANGE
SPFB : PB SP LINEAR PROCESS FEEDBACK
VIDEO : VIDEO IN

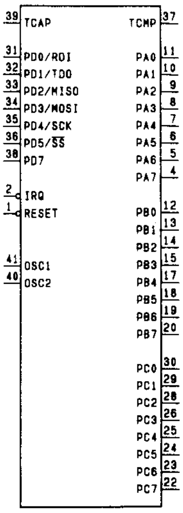
OUTPUT
DB AMP : 6dB AMP OUT
LPFB : PB LINEAR PROCESS FEEDBACK
NLPR : NON LINEAR PROCESS
S EMP : SUB EMPHASIS


RELP 10
RSLP 11
EP
SP
LIPS 3
LIPS 4
S/E CH 5
LBAL 14
LBAL 15
VIDEO 1
REC
PLAY
NON LINEAR PROCESS
REC
REC
PLAY
6 S EMP
12 NLPR
EPFB 17
SPFB 18
EP
SP
16 LPFB
DB AMP 7
9 DB AMP

MC68HC05C4 (MOTOROLA)

C-MOS 8-BIT MICROCONTROLLER UNIT
– TOP VIEW –

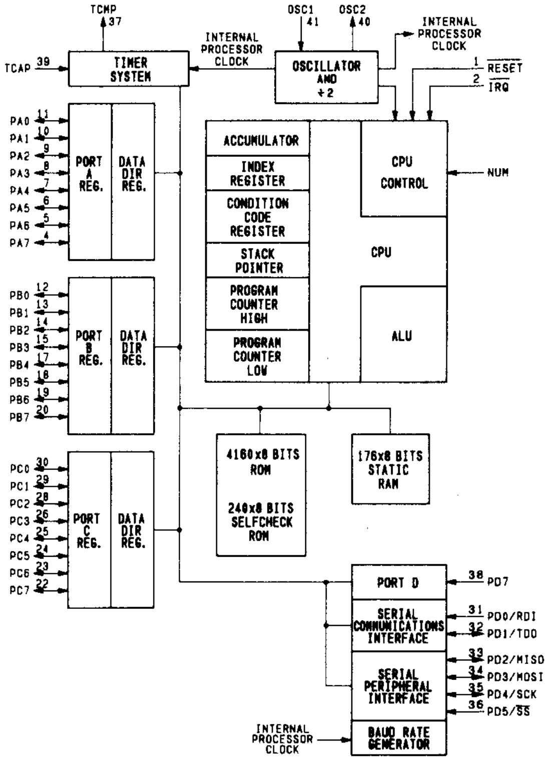

RESET IN 1
IRQ IN 2
3 NC
PA7 I/O 4
PA6 I/O 5
PA5 I/O 6
PA4 I/O 7
PA3 I/O 8
PA2 I/O 9
PA1 I/O 10
PA0 I/O 11
PB0 I/O 12
PB1 I/O 13
PB2 I/O 14
PB3 I/O 15
16 NC
PB4 I/O 17
PB5 I/O 18
PB6 I/O 19
PB7 I/O 20
21 GND
VDD (+5V) 42
41 OSC1 IN
40 OSC2 OUT
39 TCAP IN
38 PD7 IN
37 TCMP OUT
36 PD5/SS IN
35 PD4/SCK I/O
34 PD3/MOSI I/O
33 PD2/MISO I/O
32 PD1/TDO I/O
31 PD0/RDI IN
30 PC0 I/O
29 PC1 I/O
28 PC2 I/O
NC 27
26 PC3 I/O
25 PC4 I/O
24 PC5 I/O
23 PC6 I/O
22 PC7 I/O


39 TCAP
TCMP 37
31 PD0/RDI
32 PD1/TDO
33 PD2/MISO
34 PD3/MOSI
35 PD4/SCK
36 PD5/SS
38 PD7
2 IRQ
1 RESET
41 OSC1
40 OSC2
PA0 11
PA1 10
PA2 9
PA3 8
PA4 7
PA5 6
PA6 5
PA7 4
PB0 12
PB1 13
PB2 14
PB3 15
PB4 17
PB5 18
PB6 19
PB7 20
PC0 30
PC1 29
PC2 28
PC3 26
PC4 25
PC5 24
PC6 23
PC7 22

INPUT
IRQ ; INTERRUPT REQUEST
OSC1 ; OSCILLATOR FREQUENCY
PD0 – PD5, PD7 ; PROGRAMMABLE D PORT
RDI ; RECEIVING DATA
RESET ; RESET
SS ; SUB SELECT
TCAP ; CAPTURE FEATURE FOR THE ON-CHIP PROGRAMMABLE TIMER

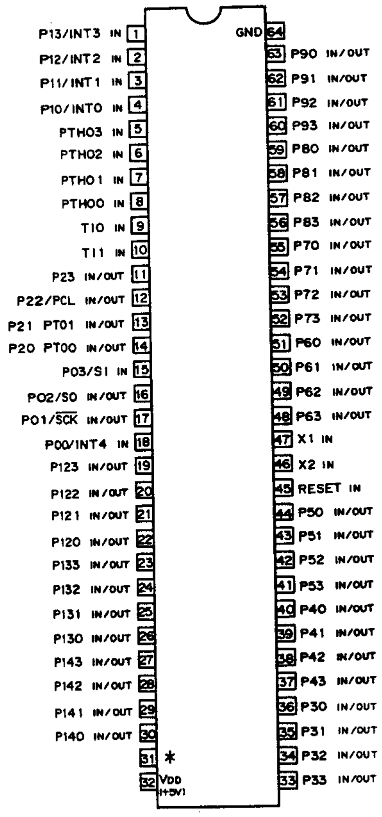
OUTPUT
OSC2 ; OSCILLATOR FREQUENCY
SCK ; SERIAL CLOCK
TCMP ; COMPARE FEATURE OF THE ON-CHIP TIMER
TDO ; TRANSMITION DATA

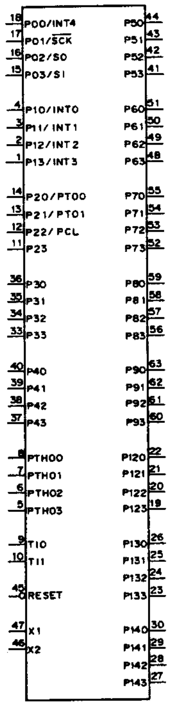
INPUT/OUTPUT
MISO ; MASTER INPUT, SUB OUTPUT
MOSI ; MASTER OUTPUT, SUB INPUT
PA0 – PA7 ; PROGRAMMABLE A PORT
PB0 – PB7 ; PROGRAMMABLE B PORT
PC0 – PC7 ; PROGRAMMABLE C PORT


TCMP 37
OSC1 41
OSC2 40
INTERNAL PROCESSOR CLOCK
INTERNAL PROCESSOR CLOCK
TCAP 39
TIMER SYSTEM
OSCILLATOR AND ÷2
1 RESET
2 IRQ
PA0 11
PA1 10
PA2 9
PA3 8
PA4 7
PA5 6
PA6 5
PA7 4
PORT A REG.
DATA DIR REG.
ACCUMULATOR
INDEX REGISTER
CONDITION CODE REGISTER
STACK POINTER
PROGRAM COUNTER HIGH
PROGRAM COUNTER LOW
CPU CONTROL
NUM
CPU
ALU
PB0 12
PB1 13
PB2 14
PB3 15
PB4 17
PB5 18
PB6 19
PB7 20
PORT B REG.
DATA DIR REG.
4160x8 BITS ROM
240x8 BITS SELFCHECK ROM
176x8 BITS STATIC RAM
PC0 30
PC1 29
PC2 28
PC3 26
PC4 25
PC5 24
PC6 23
PC7 22
PORT C REG.
DATA DIR REG.
PORT D
38 PD7
SERIAL COMMUNICATIONS INTERFACE
31 PD0/RDI
32 PD1/TDO
SERIAL PERIPHERAL INTERFACE
33 PD2/MISO
34 PD3/MOSI
35 PD4/SCK
36 PD5/SS
INTERNAL PROCESSOR CLOCK
BAUD RATE GENERATOR

UPD75108CW (NEC)

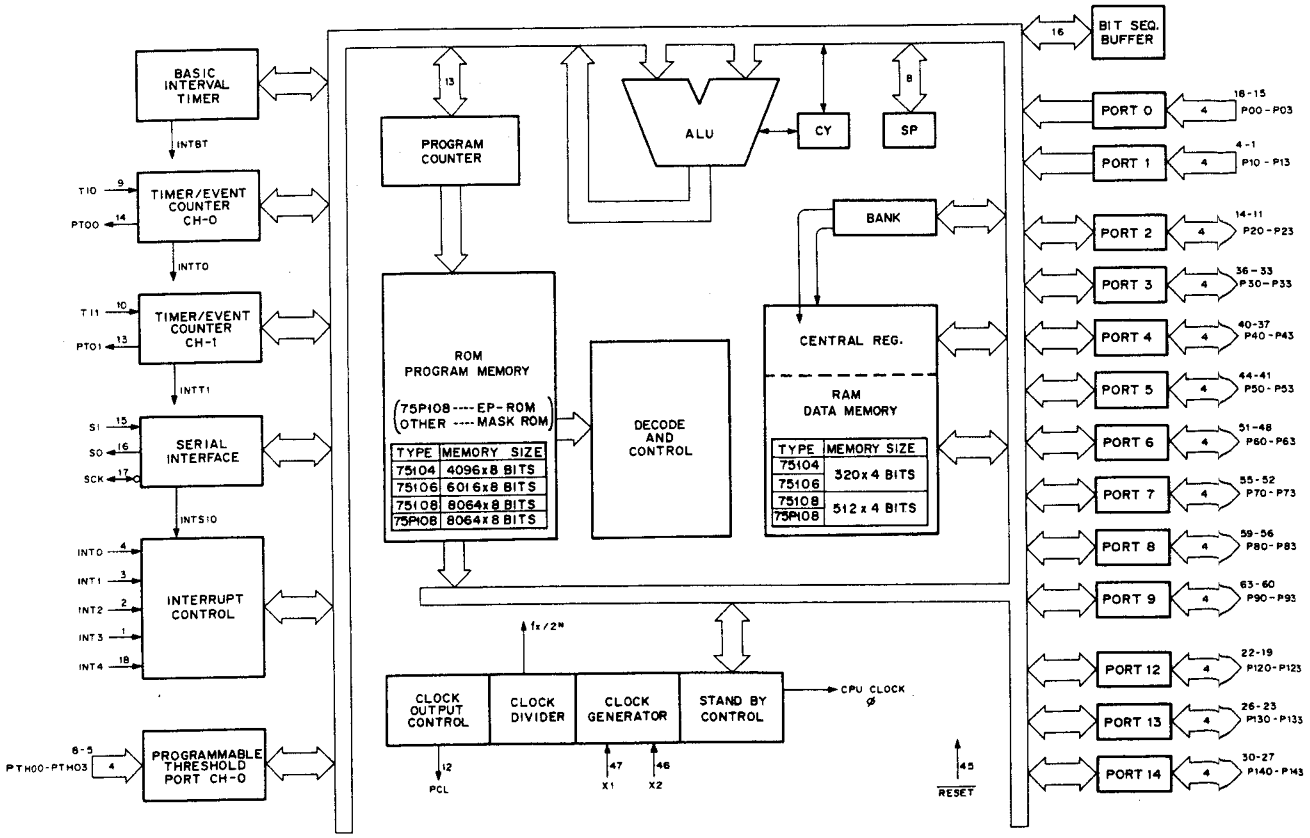
C-MOS 1 CHIP 4-BIT MICROCOMPUTER
– TOP VIEW –


P13/INT3 IN 1
P12/INT2 IN 2
P11/INT1 IN 3
P10/INTO IN 4
PTHO3 IN 5
PTHO2 IN 6
PTHO1 IN 7
PTHOO IN 8
TIO IN 9
TI1 IN 10
P23 IN/OUT 11
P22/PCL IN/OUT 12
P21 PTO1 IN/OUT 13
P20 PTOO IN/OUT 14
P03/SI IN 15
PO2/SO IN/OUT 16
PO1/SCK IN/OUT 17
POO/INT4 IN 18
P123 IN/OUT 19
P122 IN/OUT 20
P121 IN/OUT 21
P120 IN/OUT 22
P133 IN/OUT 23
P132 IN/OUT 24
P131 IN/OUT 25
P130 IN/OUT 26
P143 IN/OUT 27
P142 IN/OUT 28
P141 IN/OUT 29
P140 IN/OUT 30
31 *
32 VDD (+5V)
GND 64
63 P90 IN/OUT
62 P91 IN/OUT
61 P92 IN/OUT
60 P93 IN/OUT
59 P80 IN/OUT
58 P81 IN/OUT
57 P82 IN/OUT
56 P83 IN/OUT
55 P70 IN/OUT
54 P71 IN/OUT
53 P72 IN/OUT
52 P73 IN/OUT
51 P60 IN/OUT
50 P61 IN/OUT
49 P62 IN/OUT
48 P63 IN/OUT
47 X1 IN
46 X2 IN
45 RESET IN
44 P50 IN/OUT
43 P51 IN/OUT
42 P52 IN/OUT
41 P53 IN/OUT
40 P40 IN/OUT
39 P41 IN/OUT
38 P42 IN/OUT
37 P43 IN/OUT
36 P30 IN/OUT
35 P31 IN/OUT
34 P32 IN/OUT
33 P33 IN/OUT

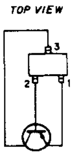

18 POO/INT4
17 PO1/SCK
16 PO2/SO
15 PO3/SI
4 P10/INTO
3 P11/INT1
2 P12/INT2
1 P13/INT3
14 P20/PTOO
13 P21/PTO1
12 P22/PCL
11 P23
36 P30
35 P31
34 P32
33 P33
40 P40
39 P41
38 P42
37 P43
8 PTHOO
7 PTHO1
6 PTHO2
5 PTHO3
9 TIO
10 TI1
45 RESET
47 X1
46 X2
P50 44
P51 43
P52 42
P53 41
P60 51
P61 50
P62 49
P63 48
P70 55
P71 54
P72 53
P73 52
P80 59
P81 58
P82 57
P83 56
P90 63
P91 62
P92 61
P93 60
P120 22
P121 21
P122 20
P123 19
P130 26
P131 25
P132 24
P133 23
P140 30
P141 29
P142 28
P143 27

INTO – INT4	; INTERRUPT INPUTS
P00 – P03	; 4-BIT INPUT PORT (PORT0)
P10 – P13	; 4-BIT INPUT PORT (PORT1)
P20 – P23	; 4-BIT I/O PORT (PORT2)
P30 – P33	; 4-BIT I/O PORT (PORT3), PROGRAMMABLE
P40 – P43	; 4-BIT I/O PORT (PORT4)
P50 – P53	; 4-BIT I/O PORT (PORT5)
P60 – P63	; 4-BIT I/O PORT (PORT6), PROGRAMMABLE
P70 – P73	; 4-BIT I/O PORT (PORT7)
P80 – P83	; 4-BIT I/O PORT (PORT8)
P90 – P93	; 4-BIT I/O PORT (PORT9)
P120 – P123	; 4-BIT I/O PORT (PORT12), OPEN DRAIN
P130 – P133	; 4-BIT I/O PORT (PORT13), OPEN DRAIN
P140 – P143	; 4-BIT I/O PORT (PORT14), OPEN DRAIN
PCL	; CLOCK OUTPUT, PROGRAMABLE
PTHOO – PTHO3	; THRESHOLD 4-BIT ANALOG INPUT PORT, PROGRAMABLE
PTOO	; TIMER/EVENT COUNTER OUTPUT (CH-1)
PTO1	; TIMER/EVENT COUNTER OUTPUT (CH-2)
RESET	; SYSTEM RESET INPUT
SI	; SERIAL INTERFACE DATA INPUT
SO	; SERIAL INTERFACE DATA OUTPUT
SCK	; SERIAL INTERFACE CLOCK INPUT/OUTPUT
TIO	; TIMER/EVENT COUNTER CLOCK INPUT (CH-0)
TI1	; TIMER/EVENT COUNTER CLOCK INPUT (CH-1)
X1, X2	; CONNECTED CRYSTAL FOR SYSTEM CLOCK GENERATE

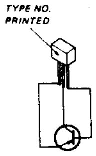
*; PIN31
Vpp(+5V) ; 75P108 TYPE
NC ; OTHER TYPES


BASIC INTERVAL TIMER
INTBT
TIO 9
PTOO 14
TIMER/EVENT COUNTER CH-0
INTTO
TI1 10
PTO1 13
TIMER/EVENT COUNTER CH-1
INTT1
SI 15
SO 16
SCK 17
SERIAL INTERFACE
INTSIO
INTO 4
INT1 3
INT2 2
INT3 1
INT4 18
INTERRUPT CONTROL
8-5
PTHOO-PTHO3
4
PROGRAMMABLE THRESHOLD PORT CH-0
13
PROGRAM COUNTER
ALU
CY
8
SP
BANK
ROM PROGRAM MEMORY
(75P108 ---- EP-ROM
OTHER ---- MASK ROM)
TYPE | MEMORY SIZE
75104 | 4096x8 BITS
75106 | 6016x8 BITS
75108 | 8064x8 BITS
75P108 | 8064x8 BITS
DECODE AND CONTROL
CENTRAL REG.
RAM DATA MEMORY
TYPE | MEMORY SIZE
75104 | 320x4 BITS
75106 |
75108 | 512x4 BITS
75P108 |
fx/2ⁿ
CLOCK OUTPUT CONTROL
CLOCK DIVIDER
CLOCK GENERATOR
STAND BY CONTROL
CPU CLOCK
ø
12
PCL
47
X1
46
X2
45
RESET
16
BIT SEQ. BUFFER
PORT 0 4 18-15 P00-P03
PORT 1 4 4-1 P10-P13
PORT 2 4 14-11 P20-P23
PORT 3 4 36-33 P30-P33
PORT 4 4 40-37 P40-P43
PORT 5 4 44-41 P50-P53
PORT 6 4 51-48 P60-P63
PORT 7 4 55-52 P70-P73
PORT 8 4 59-56 P80-P83
PORT 9 4 63-60 P90-P93
PORT 12 4 22-19 P120-P123
PORT 13 4 26-23 P130-P133
PORT 14 4 30-27 P140-P143

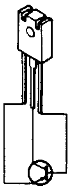
TRANSISTOR


TOP VIEW
3
2
1

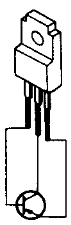
2SA1162G
2SA812
2SB1197K


TYPE NO. PRINTED

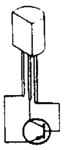
2SA1175



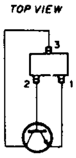
2SB1142



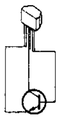
2SB1370



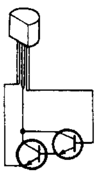
2SB733
2SB739


TOP VIEW
3
2
1

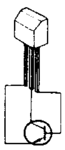
2SC1623
2SC2712G
2SC3326N
2SD1781K



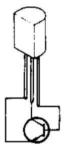
2SC3327



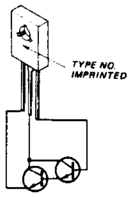
2SD1111



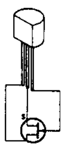
2SD774



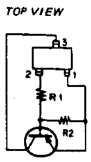
2SD788


TYPE NO. IMPRINTED

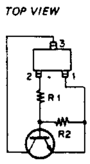
2SD894



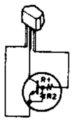
2SK523


TOP VIEW
3
2
1
R1
R2

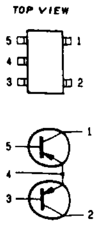
DTA114EK (R1 = 10K, R2 = 10K)
DTA124EK (R1 = 22K, R2 = 22K)
DTA144EK (R1 = 47K, R2 = 47K)
DTB143EK (R1 = 4.7K, R2 = 4.7K)


TOP VIEW
3
2
1
R1
R2

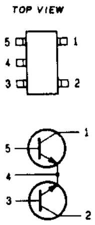
DTC114YK (R1 = 10K, R2 = 47K)
DTC124EK (R1 = 22K, R2 = 22K)
DTC144EK (R1 = 47K, R2 = 47K)



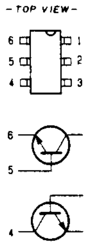
DTC144ES (R1 = 47K, R2 = 47K)


TOP VIEW
5
4
3
1
2

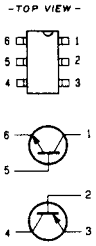
FMS1FE


TOP VIEW
5
4
3
1
2

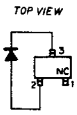
FMW1


- TOP VIEW -
6
5
4
1
2
3

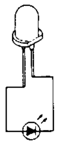
IMX1


- TOP VIEW -
6
5
4
1
2
3

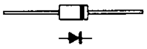
IMZ1


TOP VIEW
3
NC
2
1

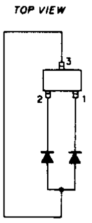
SB05-05CP



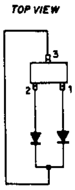
GL-5HD8 ; RED



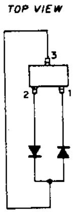
10E-2
1SS119


TOP VIEW
3
2
1

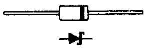
1S2835
1S2836


TOP VIEW
3
2
1

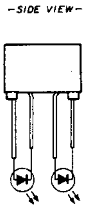
1S2837
MA152WK


TOP VIEW
3
2
1

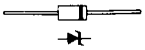
1SS123
1SS226



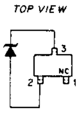
1SS99
ERB81-004



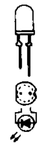
LT-9200D ; RED
LT-9200N ; YELLOWISH GREEN
– SIDE VIEW –



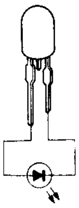
RD ? ?ES
RD ? ?FB ?


TOP VIEW
3
NC
2
1

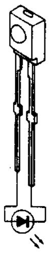
RD ? ?M



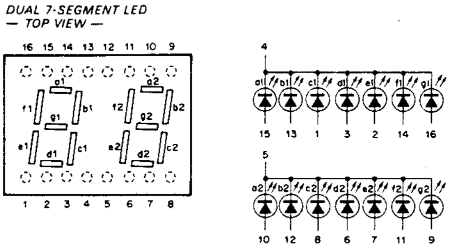
TLUG154 ; GREEN



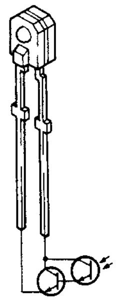
TLY256 ; YELLOW



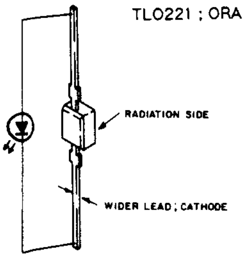
GL451V ; INFRARED


DUAL 7-SEGMENT LED
— TOP VIEW —
16 15 14 13 12 11 10 9
a1
f1
b1
g1
e1
c1
d1
a2
f2
b2
g2
e2
c2
d2
1 2 3 4 5 6 7 8
4
a1 b1 c1 d1 e1 f1 g1
15 13 1 3 2 14 16
5
a2 b2 c2 d2 e2 f2 g2
10 12 8 6 7 11 9

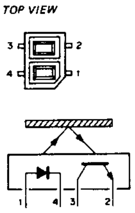
LB402VK (ROHM)



PT483F1


RADIATION SIDE
WIDER LEAD ; CATHODE

TLO221 ; ORANGE


TOP VIEW
3
2
4
1
1
4
3
2

GP-2S09

SECTION 13
BOARD LAYOUTS AND SCHEMATIC DIAGRAMS

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARD

	Board	Circuit Function	Page
A	AC-148	AC Input	13-48
	AH-40	Audio/Erase/CTL Head	13-50
	AU-179A	AFM Process/Normal Audio Process	13-20
C	CM-14	Cassette Compartment Motor	13-48
	CP-196	Connection of Rear Connector	13-46
	CP-197	Connection of Rear Connector	13-47
	CR-42	Chroma Process	13-4
D	DP-166	Counter Display	13-40
	DR-153 (a)	T-Reel Driver	13-45
	DR-153 (b)	S-Reel Driver	13-45
	DR-167	Cam Mode Detect & Drum Motor Driver	13-42
	DR-176A	Capstan FG Amp. & Capstan Motor Driver	13-43
	DUS-445	Direction & Stop Detect	13-33
	DUS-535	CTL Head Amp	13-37
	DUS-544	Capacitor for T-Brake Solenoid	13-42
	DUS-592	N-VHS Signal Filter	13-18
H	HN-160	Connection	13-44
	HN-182	Connection (Servo)	13-48
	HP-54	Headphones/MIC Connector	13-50
K	KY-229A	Function Key/LED/Switch	13-40
L	LD-35	Loading Motor	13-48
	LE-80	Tape Top/End LED	13-44
	LE-86	Tension Regulator LED	13-44
M	MT-73	Level Meter	13-50
N	NR-40A	Noise Reducer	13-10
R	RP-62A	Video & AFM Head Amp.	13-2
S	SE-151	Tape End Sensor	13-42
	SE-152	Tape Top Sensor	13-44
	SE-159	Tension Regulator CDS Detect	13-44
	SS-49C (inc. DUS-445/535)	Servo & System Control	13-30
	SW-513	Audio Signal Selector	13-28
	SW-514A	Select Switch	13-48
	SW-532	TIMER REC/TIMER PLAY Switch	13-48
V	VO-37A (inc. DUS-592)	Y/C Video Process	13-14

In the schematic diagrams, the following marks are described near by reference number.
These are parts data at factory.

CAPACITOR (C)

AL AS	ELECTROLYTIC
TA	TANTALUM
CA CC CCS CM CS	CERAMIC
MPS PP PS PT	MYLAR
MD	DIPPED MICA
MS	MICA

RESISTOR (R)
VARIABLE RESISTOR (RV)

RC RD	CARBON
RF	FUSE
RN RS	METAL
RW	WIERWOUND

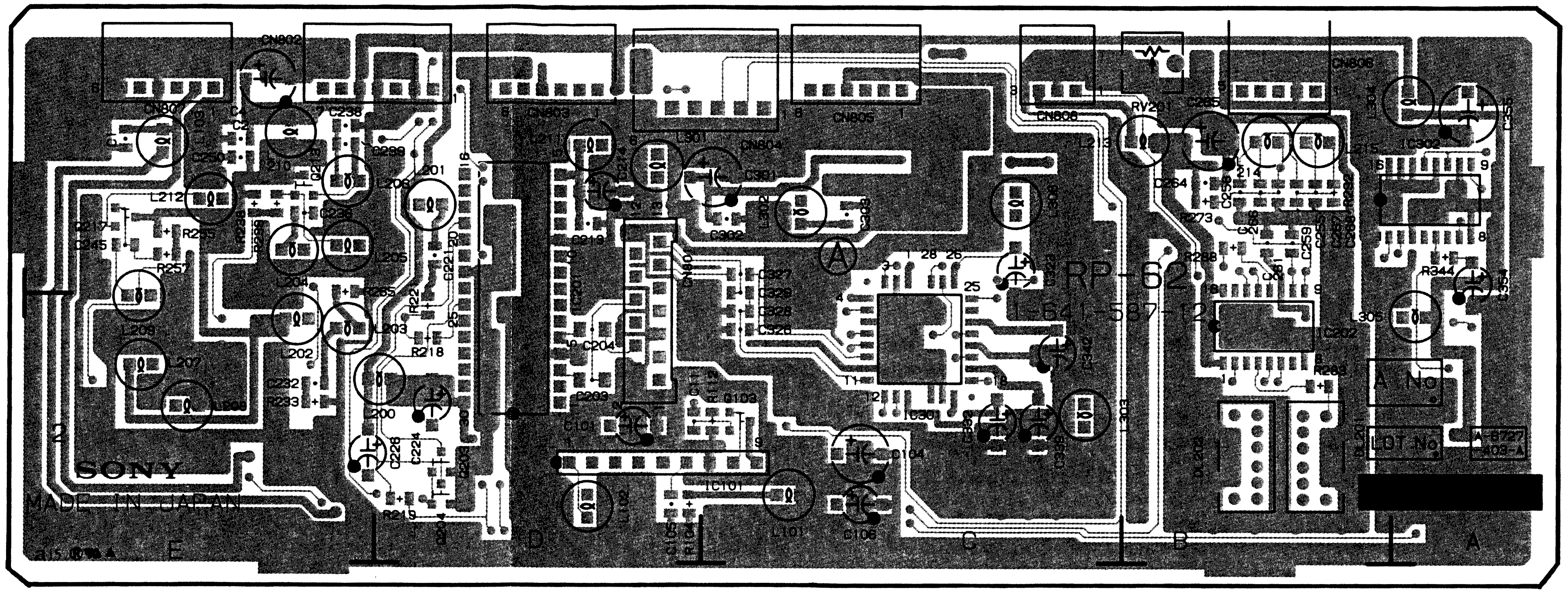
The mentioned items at waveform photograph of this section are measurement point, board location, and machine operation mode.

RP-62A; VIDEO & AFM HEAD AMP

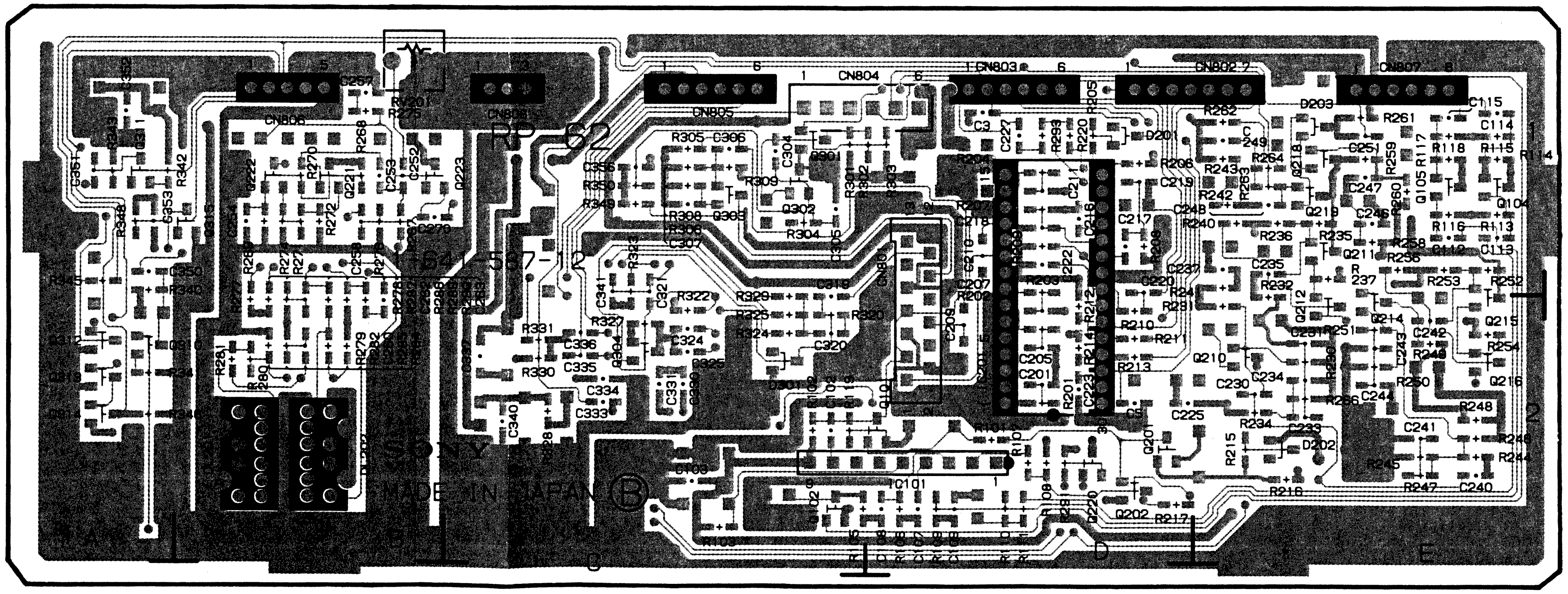
RP-62A (1-641-587-12)

CN801	D-1
CN802	E-1
CN803	D-1
CN804	C-1
CN805	C-1
CN806	B-1
CN807	E-1
CN808	C-1
DL201	B-2
DL202	B-2
D201	D-1 *
D202	E-2 *
D203	E-1 *
D301	C-2 *
IC101	C-2
IC201	D-2
IC202	B-2
IC301	C-2
IC302	A-1
Q101	D-2 *
Q102	C-2 *
Q103	C-2
Q104	E-1 *
Q105	E-1 *
Q201	D-2 *
Q202	D-2 *
Q203	D-2
Q204	D-2
Q210	E-2 *
Q211	E-1 *
Q212	E-2 *
Q213	E-1
Q214	E-2 *
Q215	D-1 *
Q216	D-2 *
Q217	E-1
Q218	E-1 *
Q219	E-1 *
Q220	D-2 *
Q221	B-1 *
Q222	B-1 *
Q223	C-1 *
Q301	C-1 *
Q302	C-1 *
Q303	C-1 *
Q304	C-2 *
Q310	B-2 *
Q311	A-1 *
Q312	A-2 *
Q313	A-2 *
Q314	A-2 *
Q315	B-1 *
RV201	B-1

* mark; B SIDE mount


CN802
CN801
CN803
CN804
CN805
CN806
CN808
RV201
RP-62
1-641-587-12
SONY
MADE IN JAPAN
A
B
C
D
E
1
2

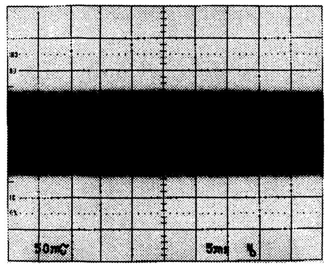
RP-62A — A SIDE —
1-641-587-12 (1)
SVO-9620


CN806
CN808
CN805
CN804
CN803
CN802
CN807
IC101
RP-62
1-641-587-12
SONY
MADE IN JAPAN
A
B
C
D
E
1
2

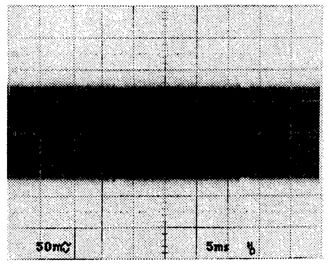
RP-62A — B SIDE —
1-641-587-12 (1)
SVO-9620

RP-62A; VIDEO & AFM HEAD AMP

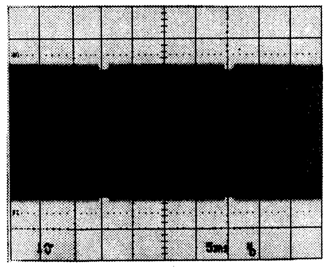
① CN804 pin 1 (C-1) REC mode



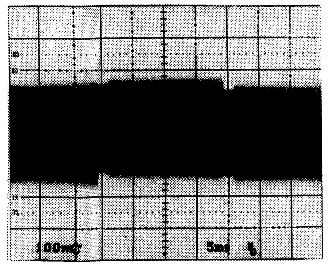
② CN804 pin 2 (C-1) PB mode (S)
CN804 pin 5 (C-1) (TRIG)



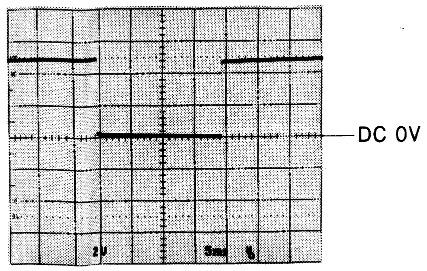
③ CN804 pin 3 (C-1) REC mode
CN804 pin 5 (C-1) (TRIG)



④ CN804 pin 4 (C-1) PB mode (N)
CN804 pin 5 (C-1) (TRIG)

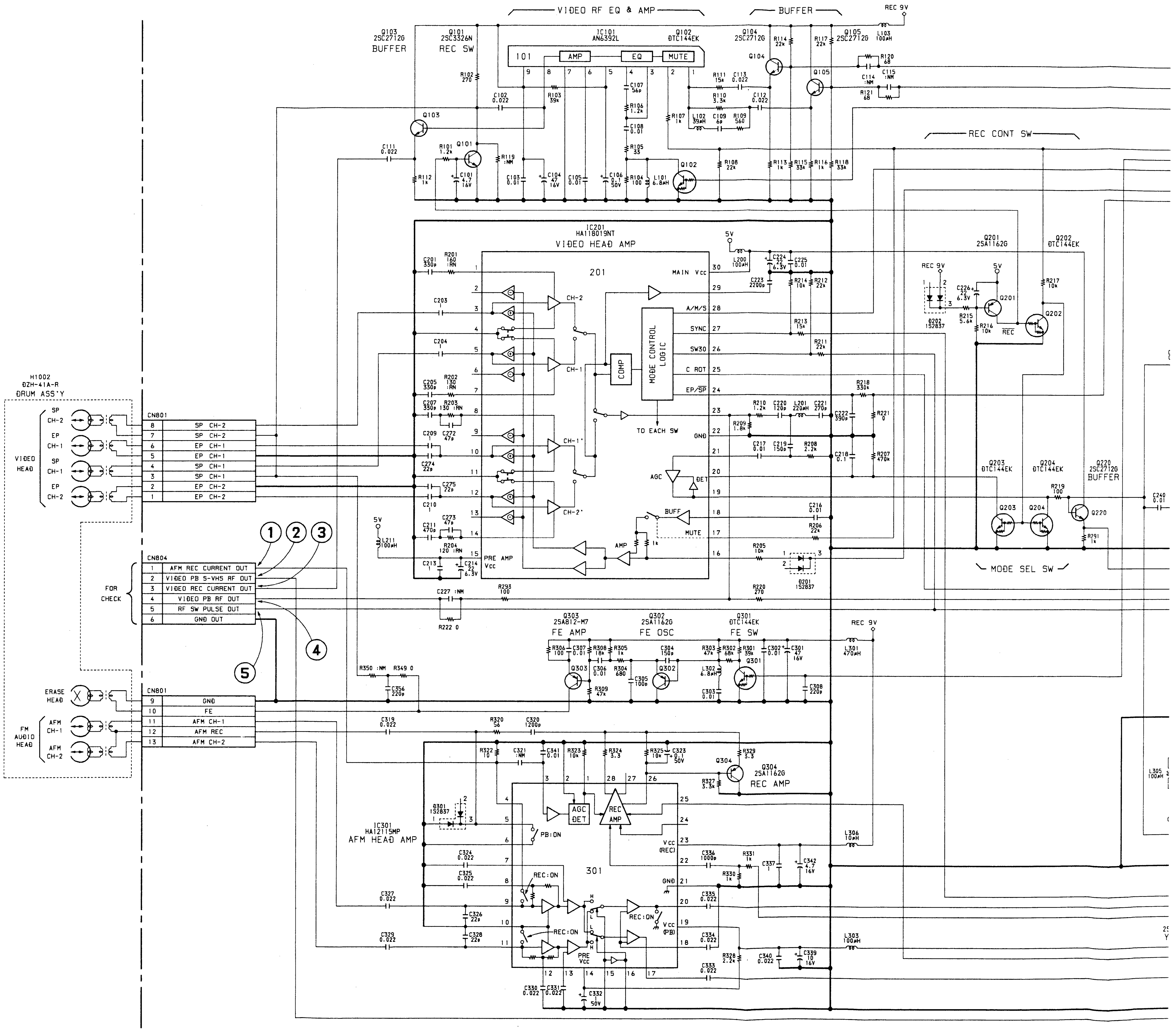


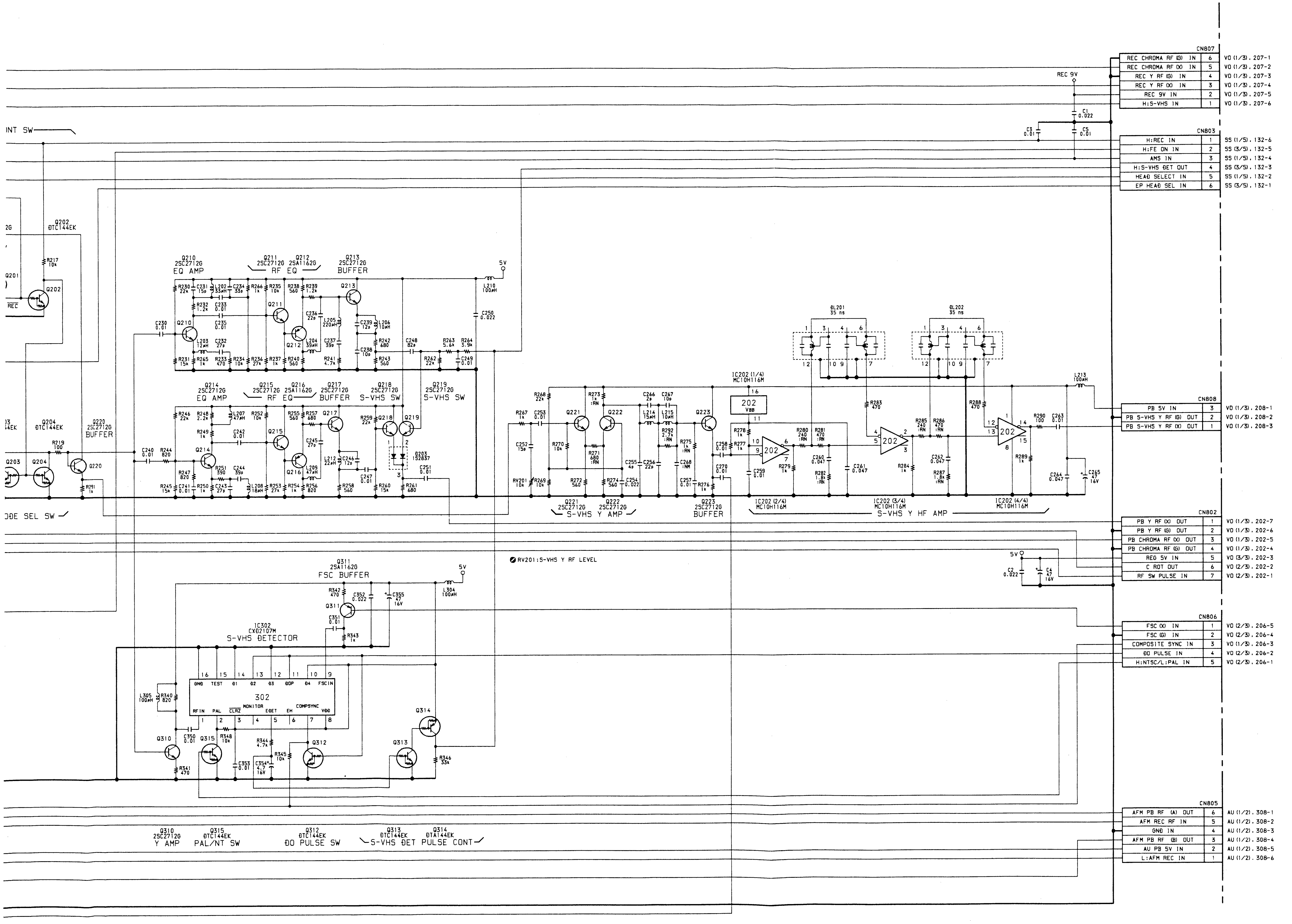
⑤ CN804 pin 5 (C-1) REC/PB mode



Measurement Condition

S-VIDEO IN: color bars (EBU)
REC mode: S-VHS
PB mode (S): KRV-45HPS
PB mode (N): KRV-45PS


VIDEO RF EQ & AMP
BUFFER
REC 9V
Q103 2SC2712G BUFFER
Q101 2SC3326N REC SW
IC101 AN6392L
Q102 DTC144EK
Q104 2SC2712G
Q105 2SC2712G
101
AMP
EQ
MUTE
REC CONT SW
IC201 HA118019NT
VIDEO HEAD AMP
201
MAIN Vcc
A/M/S
SYNC
SW30
C ROT
EP/SP
GND
AGC
DET
BUFF
MUTE
AMP
PRE AMP Vcc
COMP
MODE CONTROL LOGIC
TO EACH SW
CH-2
CH-1
CH-1'
CH-2'
Q201 2SA1162G
Q202 DTC144EK
REC
D202 1S2837
Q203 DTC144EK
Q204 DTC144EK
Q220 2SC2712G BUFFER
MODE SEL SW
D201 1S2837
H1002 DZH-41A-R DRUM ASS'Y
VIDEO HEAD
SP CH-2
EP CH-1
SP CH-1
EP CH-2
CN801
8 SP CH-2
7 SP CH-2
6 EP CH-1
5 EP CH-1
4 SP CH-1
3 SP CH-1
2 EP CH-2
1 EP CH-2
FOR CHECK
CN804
1 AFM REC CURRENT OUT
2 VIDEO PB S-VHS RF OUT
3 VIDEO REC CURRENT OUT
4 VIDEO PB RF OUT
5 RF SW PULSE OUT
6 GND OUT
①
②
③
④
⑤
ERASE HEAD
FM AUDIO HEAD
AFM CH-1
AFM CH-2
CN801
9 GND
10 FE
11 AFM CH-1
12 AFM REC
13 AFM CH-2
Q303 2SA812-M7 FE AMP
Q302 2SA1162G FE OSC
Q301 DTC144EK FE SW
REC 9V
IC301 HA12115MP AFM HEAD AMP
301
AGC DET
REC AMP
PB:ON
REC:ON
Vcc (REC)
Vcc (PB)
PRE Vcc
GND
Q304 2SA1162G REC AMP
D301 1S2837


INT SW
Q202 DTC144EK
Q201
REC
Q203
Q204 DTC144EK
Q220 2SC2712G BUFFER
R219 100
DDE SEL SW
Q210 2SC2712G EQ AMP
Q211 2SC2712G
Q212 2SA1162G
RF EQ
Q213 2SC2712G BUFFER
5V
L210 100μH
C250 0.022
C230 0.01
Q214 2SC2712G EQ AMP
Q215 2SC2712G
Q216 2SA1162G
RF EQ
Q217 2SC2712G BUFFER
Q218 2SC2712G S-VHS SW
Q219 2SC2712G S-VHS SW
D203 1SS837
C240 0.01
R244 820
Q221 2SC2712G
Q222 2SC2712G
S-VHS Y AMP
Q223 2SC2712G BUFFER
RV201:S-VHS Y RF LEVEL
DL201 35 ns
DL202 35 ns
IC202 (1/4) MC10H116M
202 VBB
IC202 (2/4) MC10H116M
IC202 (3/4) MC10H116M
S-VHS Y HF AMP
IC202 (4/4) MC10H116M
L213 100μH
REC 9V
C1 0.022
C3 0.01
C5 0.01
C2 0.022
C4 47 16V
C265 47 16V
Q311 2SA1162G FSC BUFFER
5V
L304 100μH
C355 47 16V
IC302 CXD2107M S-VHS DETECTOR
GND TEST O1 O2 O3 ODP O4 FSCIN
302
RFIN PAL CLRZ MONITOR EDET EH COMPSYNC VDD
L305 100μH
R340 820
Q310
Q315
Q312
Q313
Q314
Q310 2SC2712G Y AMP
Q315 DTC144EK PAL/NT SW
Q312 DTC144EK DO PULSE SW
Q313 DTC144EK
Q314 DTA144EK
S-VHS DET PULSE CONT
CN807
REC CHROMA RF (G) IN 6 VO (1/3), 207-1
REC CHROMA RF (X) IN 5 VO (1/3), 207-2
REC Y RF (G) IN 4 VO (1/3), 207-3
REC Y RF (X) IN 3 VO (1/3), 207-4
REC 9V IN 2 VO (1/3), 207-5
H:S-VHS IN 1 VO (1/3), 207-6
CN803
H:REC IN 1 SS (1/5), 132-6
H:FE ON IN 2 SS (3/5), 132-5
AMS IN 3 SS (1/5), 132-4
H:S-VHS DET OUT 4 SS (3/5), 132-3
HEAD SELECT IN 5 SS (1/5), 132-2
EP HEAD SEL IN 6 SS (3/5), 132-1
CN808
PB 5V IN 3 VO (1/3), 208-1
PB S-VHS Y RF (G) OUT 2 VO (1/3), 208-2
PB S-VHS Y RF (X) OUT 1 VO (1/3), 208-3
CN802
PB Y RF (X) OUT 1 VO (1/3), 202-7
PB Y RF (G) OUT 2 VO (1/3), 202-6
PB CHROMA RF (X) OUT 3 VO (1/3), 202-5
PB CHROMA RF (G) OUT 4 VO (1/3), 202-4
REG 5V IN 5 VO (3/3), 202-3
C ROT OUT 6 VO (2/3), 202-2
RF SW PULSE IN 7 VO (2/3), 202-1
CN806
FSC (X) IN 1 VO (2/3), 206-5
FSC (G) IN 2 VO (2/3), 206-4
COMPOSITE SYNC IN 3 VO (1/3), 206-3
DO PULSE IN 4 VO (2/3), 206-2
H:NTSC/L:PAL IN 5 VO (2/3), 206-1
CN805
AFM PB RF (A) OUT 6 AU (1/2), 308-1
AFM REC RF IN 5 AU (1/2), 308-2
GND IN 4 AU (1/2), 308-3
AFM PB RF (B) OUT 3 AU (1/2), 308-4
AU PB 5V IN 2 AU (1/2), 308-5
L:AFM REC IN 1 AU (1/2), 308-6

1
2
3
4
5

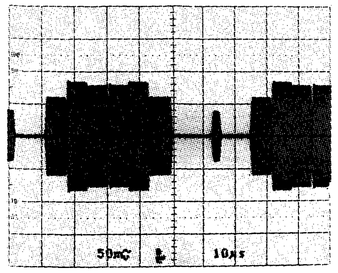
RP-62A

1-641-587-12 (1)
SVO-9620

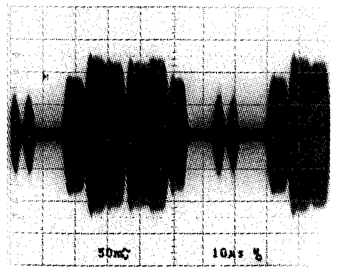
H | I | J | K | L | M | N | O | P

CR-42 (1/3) ; CHROMA PROCESS & CHROMA OUTPUT

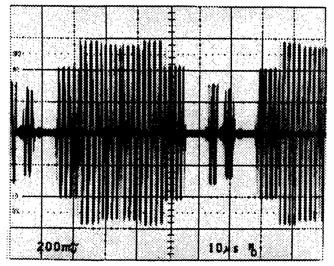
① TP605 (H-2＊) STOP (E-E) mode



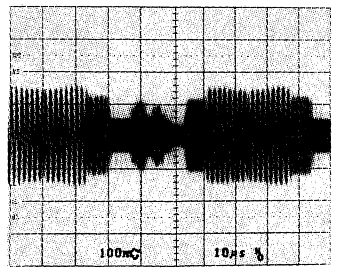
TP605 (H-2＊) PB mode



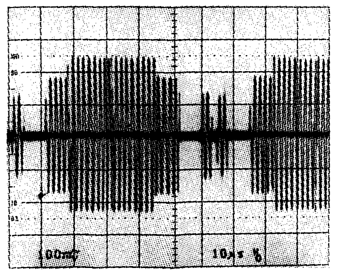
② TP607 (F-3＊) STOP (E-E) mode



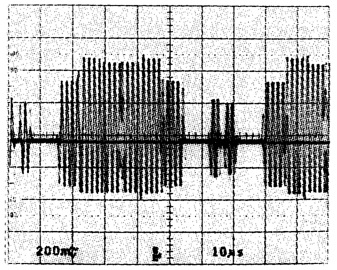
TP607 (F-3＊) PB mode



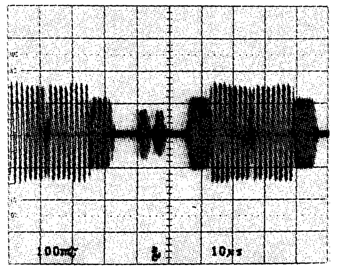
③ TP603 (H-3＊) STOP (E-E) mode



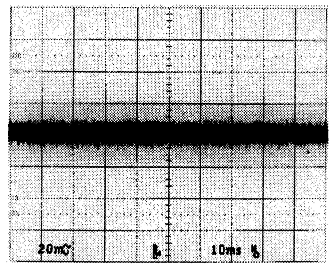
④ TP601 (G-3＊) STOP (E-E) mode



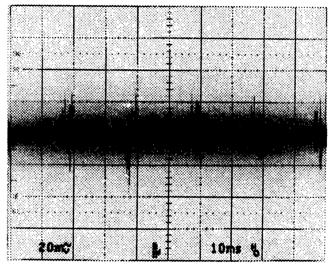
TP601 (G-3＊) PB mode



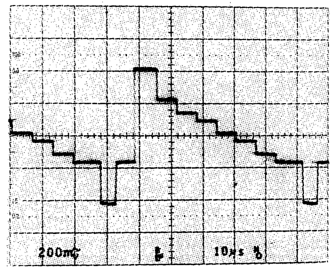
⑤ TP606 (F-1＊) STOP (E-E) mode



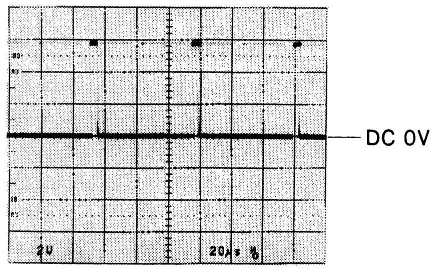
TP606 (F-1＊) PB mode



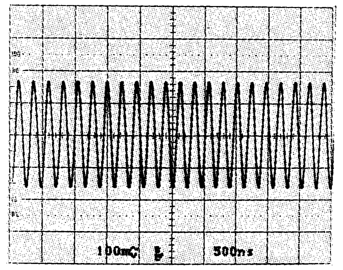
⑥ CN212 pin 18 (H-2)
STOP (E-E) mode



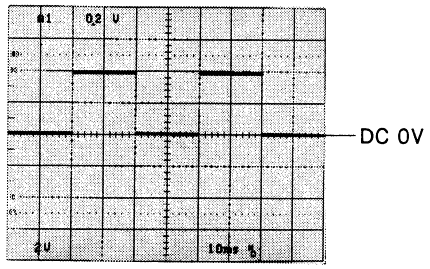
⑦ IC604 pin 4 (F-1)



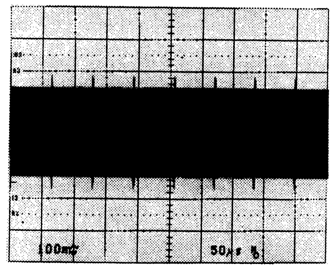
⑧ TP602 (H-2＊)



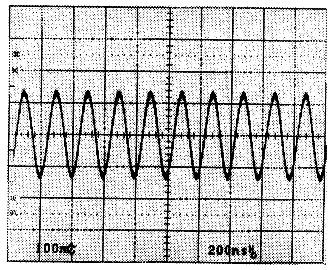
⑨ TP610 (E-3＊) REC/PB mode



⑩ TP608 (F-3＊)



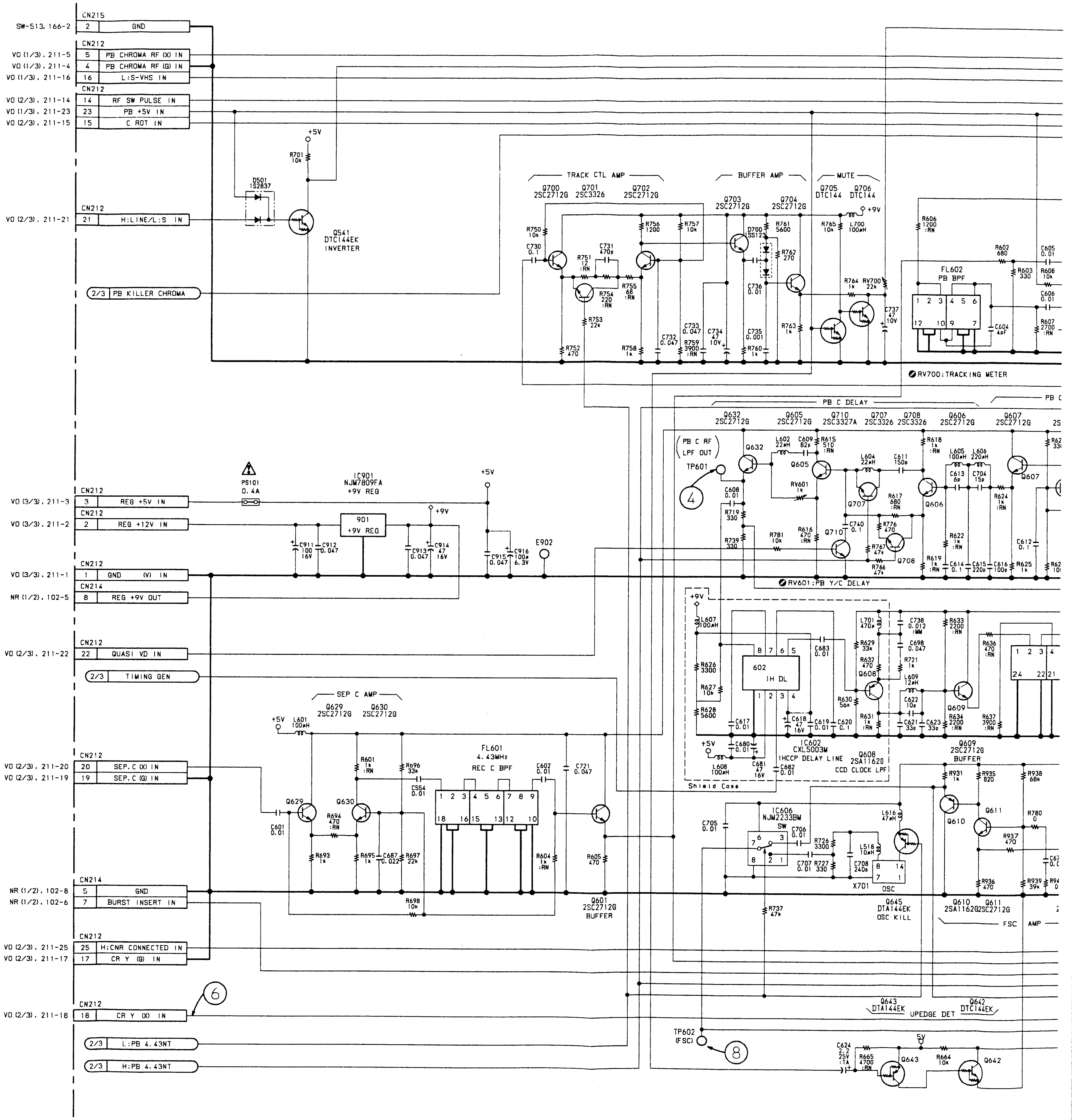
TP608 (F-3＊) (fsc part)

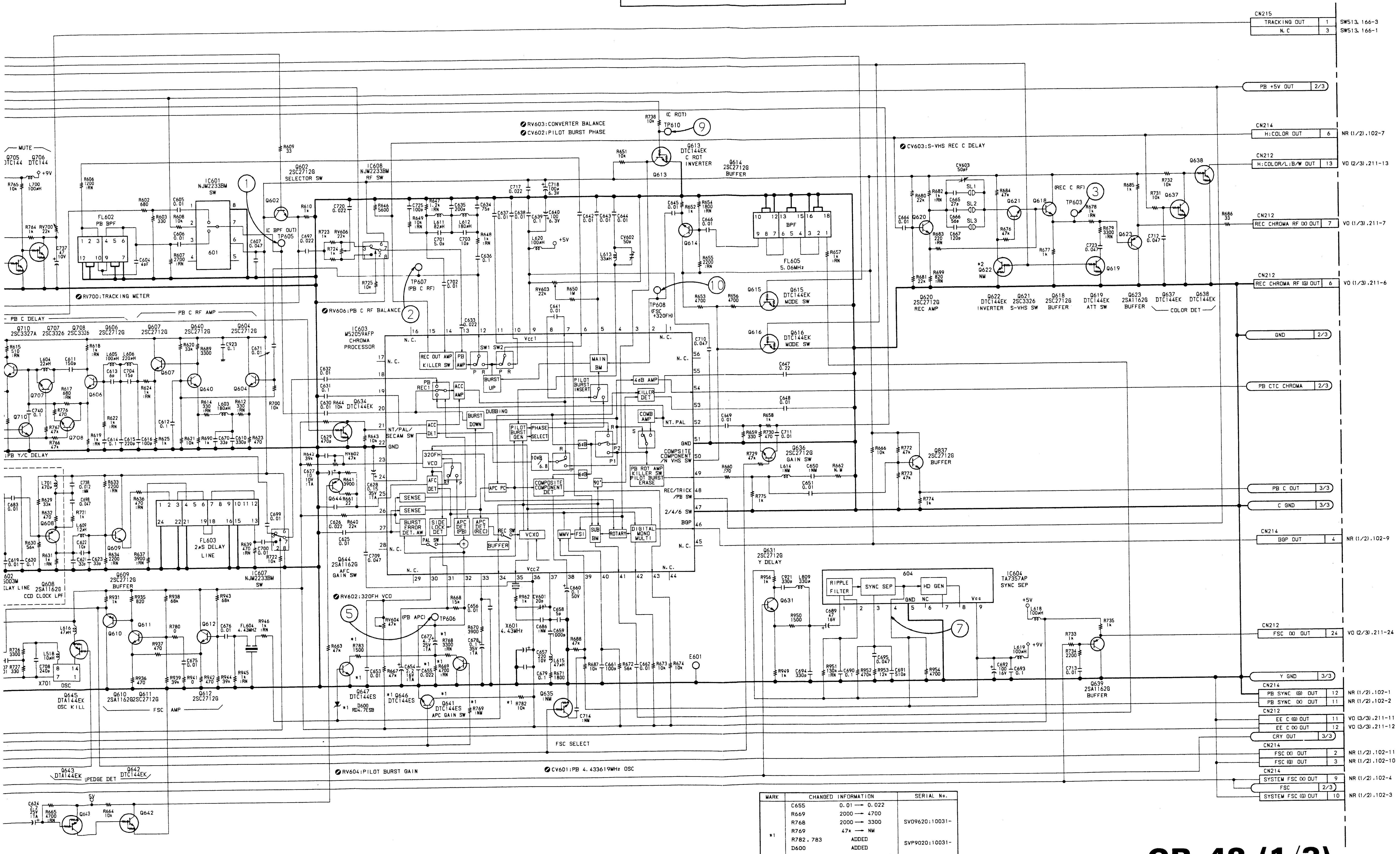


Measurement Condition
S-VIDEO IN: color bars (EBU)
STOP (E-E) mode: S-VHS
REC mode: S-VHS
PB mode: KRV-45HPS

＊ mark; B SIDE mount

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


CN215
SW-513, 166-2
GND
CN212
PB CHROMA RF (X) IN
PB CHROMA RF (G) IN
L:S-VHS IN
RF SW PULSE IN
PB +5V IN
C ROT IN
H:LINE/L:S IN
2/3 PB KILLER CHROMA
D501 1S2837
Q541 DTC144EK INVERTER
TRACK CTL AMP
BUFFER AMP
MUTE
Q700 2SC2712G
Q701 2SC3326
Q702 2SC2712G
Q703 2SC2712G
Q704 2SC2712G
Q705 DTC144
Q706 DTC144
FL602 PB BPF
RV700:TRACKING METER
PB C DELAY
Q632 2SC2712G
Q605 2SC2712G
Q710 2SC3327A
Q707 2SC3326
Q708 2SC3326
Q606 2SC2712G
Q607 2SC2712G
PB C RF LPF OUT
TP601
RV601:PB Y/C DELAY
REG +5V IN
REG +12V IN
PS101 0.4A
IC901 NJM7809FA +9V REG
901 +9V REG
E902
GND (V) IN
CN214
REG +9V OUT
QUASI VD IN
2/3 TIMING GEN
IC602 CXL5003M 1HCCP DELAY LINE
602 1H DL
Q608 2SA1162G CCD CLOCK LPF
Q609 2SC2712G BUFFER
Shield Case
SEP C AMP
Q629 2SC2712G
Q630 2SC2712G
FL601 4.43MHz REC C BPF
SEP.C (X) IN
SEP.C (G) IN
Q601 2SC2712G BUFFER
IC606 NJM2233BM SW
X701 OSC
Q645 DTA144EK OSC KILL
Q610 2SA1162G
Q611 2SC2712G
FSC AMP
BURST INSERT IN
H:CNR CONNECTED IN
CR Y (G) IN
CR Y (X) IN
2/3 L:PB 4.43NT
2/3 H:PB 4.43NT
TP602 (FSC)
Q643 DTA144EK
Q642 DTC144EK
UPEDGE DET


CN215
TRACKING OUT 1 SW513, 166-3
N, C 3 SW513, 166-1
PB +5V OUT 2/3
CN214
H:COLOR OUT 6 NR (1/2).102-7
CN212
H:COLOR/L:B/W OUT 13 VO (2/3).211-13
CN212
REC CHROMA RF (X) OUT 7 VO (1/3).211-7
CN212
REC CHROMA RF (G) OUT 6 VO (1/3).211-6
GND 2/3
PB CTC CHROMA 2/3
PB C OUT 3/3
C GND 3/3
CN214
BGP OUT 4 NR (1/2).102-9
CN212
FSC (X) OUT 24 VO (2/3).211-24
Y GND 3/3
CN214
PB SYNC (G) OUT 12 NR (1/2).102-1
PB SYNC (X) OUT 11 NR (1/2).102-2
CN212
EE C (G) OUT 11 VO (3/3).211-11
EE C (X) OUT 12 VO (3/3).211-12
CRY OUT 3/3
CN214
FSC (X) OUT 2 NR (1/2).102-11
FSC (G) OUT 3 NR (1/2).102-10
CN214
SYSTEM FSC (X) OUT 9 NR (1/2).102-4
FSC 2/3
SYSTEM FSC (G) OUT 10 NR (1/2).102-3
RV603:CONVERTER BALANCE
CV602:PILOT BURST PHASE
CV603:S-VHS REC C DELAY
RV700:TRACKING METER
RV606:PB C RF BALANCE
RV602:320FH VCO
RV604:PILOT BURST GAIN
CV601:PB 4.433619MHz OSC
IC601 NJM2233BM SW
IC603 M52059AFP CHROMA PROCESSOR
IC604 TA7357AP SYNC SEP
IC607 NJM2233BM SW
IC608 NJM2233BM RF SW
FL602 PB BPF
FL603 2μS DELAY LINE
FL605 5.06MHz
FL604 4.43MHz
X601 4.43MHz
Q602 2SC2712G SELECTOR SW
Q613 DTC144EK C ROT INVERTER
Q614 2SC2712G BUFFER
Q615 DTC144EK MODE SW
Q616 DTC144EK MODE SW
Q620 2SC2712G REC AMP
Q622 DTC144EK INVERTER
Q621 2SC3326 S-VHS SW
Q618 2SC2712G BUFFER
Q619 DTC144EK ATT SW
Q623 2SA1162G BUFFER
Q637 DTC144EK
Q638 DTC144EK
COLOR DET
Q636 2SC2712G GAIN SW
Q637 2SC2712G BUFFER
Q631 2SC2712G Y DELAY
Q639 2SA1162G BUFFER
Q634 DTC144EK
Q644 2SA1162G AFC GAIN SW
Q647 DTC144ES
Q646 DTC144ES
Q641 DTC144ES APC GAIN SW
D600 RD4.7ESB
Q635 :NM
FSC SELECT
MUTE
Q705 DTC144 Q706 DTC144
PB C DELAY
PB C RF AMP
Q710 2SC3327A Q707 2SC3326 Q708 2SC3326 Q606 2SC2712G Q607 2SC2712G Q640 2SC2712G Q604 2SC2712G
PB Y/C DELAY
Q608 2SA1162G
CCD CLOCK LPF
Q609 2SC2712G BUFFER
Q645 DTA144ES OSC KILL
Q610 2SA1162G Q611 2SC2712G Q612 2SC2712G
FSC AMP
Q643 DTA144EK Q642 DTC144EK
UPEDGE DET
TP605 (C BPF OUT)
TP607 (PB C RF)
TP608 (FSC +320FH)
TP610 (C ROT)
TP603 (REC C RF)
TP606 (PB APC)
E601
①
②
③
⑤
⑦
⑨
⑩
RIPPLE FILTER
SYNC SEP
HD GEN
REC OUT AMP KILLER SW
MAIN BM
PILOT BURST INSERT
4dB AMP
KILLER DET
COMB AMP
BURST UP
BURST DOWN
DUBBING
ACC DET
ACC AMP
PB REC1
PILOT BURST GEN
PHASE SELECT
320FH VCO
AFC DET
APC PC
COMPOSITE COMPONENT DET
PB ROT AMP KILLER SW PILOT BURST ERASE
SENSE
BURST ERROR DET. AW
SIDE LOCK DET
APC DET (PB)
APC DET (REC)
PAL SW
REC SW
BUFFER
VCXO
MMV
FSI
SUB BM
ROTARY
DIGITAL MONO MULTI
NT/PAL/SECAM SW
NT.PAL
COMPOSITE COMPONENT /N VHS SW
REC/TRICK /PB SW
2/4/6 SW
BGP
Vcc1
Vcc2
GND
N.C.

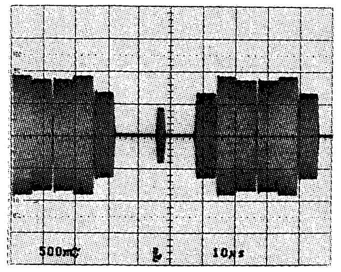
MARK	CHANGED INFORMATION		SERIAL No.
*1	C655	0.01 → 0.022	SV09620:10031- SVP9020:10031-
	R669	2000 → 4700	
	R768	2000 → 3300	
	R769	47k → NM	
	R782, 783	ADDED	
	D600	ADDED	
	Q641	2SC3326N → DTC144EK	
	Q646, 647	ADDED	
*2	Q622	DELETED	SV09620:10431- SVP9020:10231-

CR-42 (1/3)

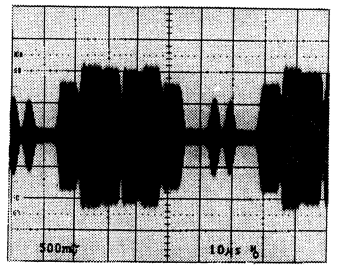
1-644-236-11 (1)
SVO-9620

CR-42 (2/3); PB CROSS TALK CANCELLER

1 ① TP501 (C-3∗) STOP (E-E) mode
TP502 (A-4∗) STOP (E-E) mode



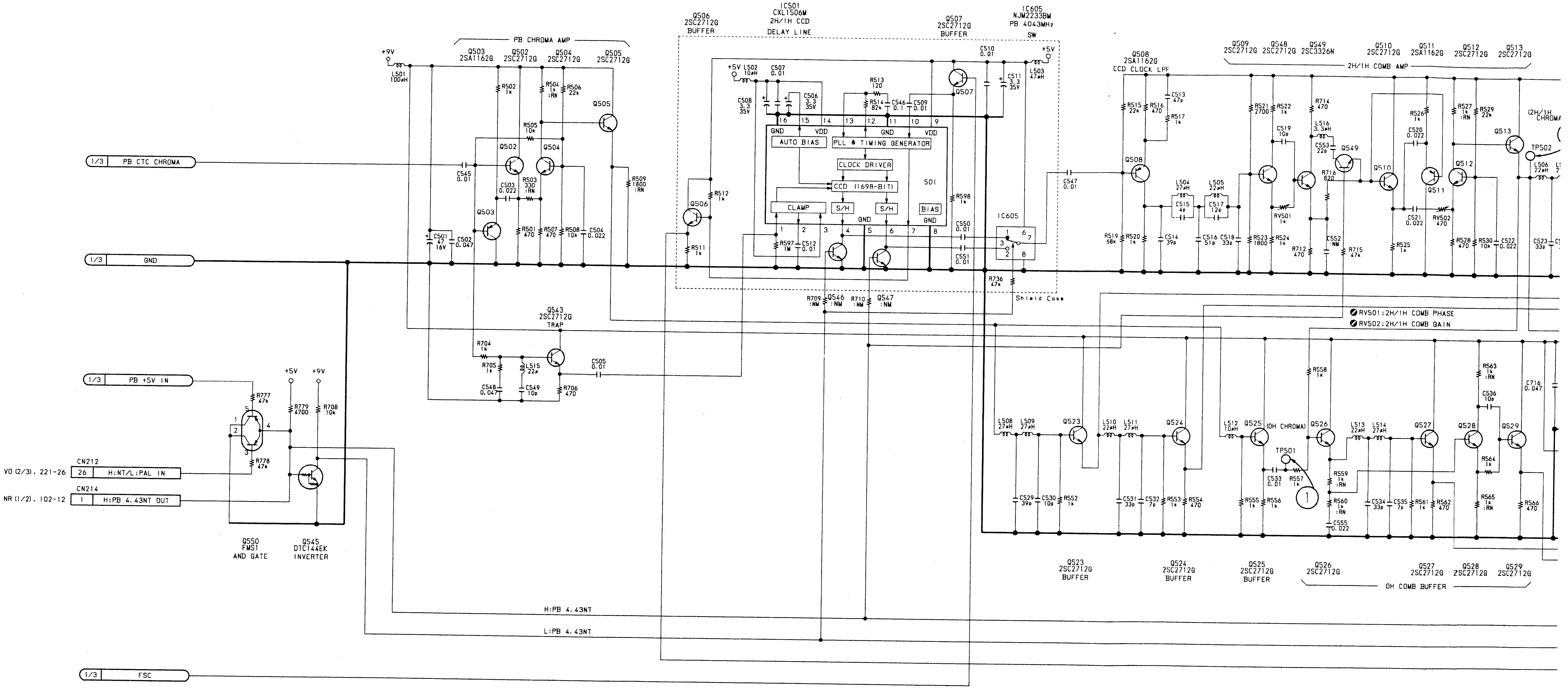
TP501 (C-3∗) PB mode
2 TP502 (A-4∗) PB mode

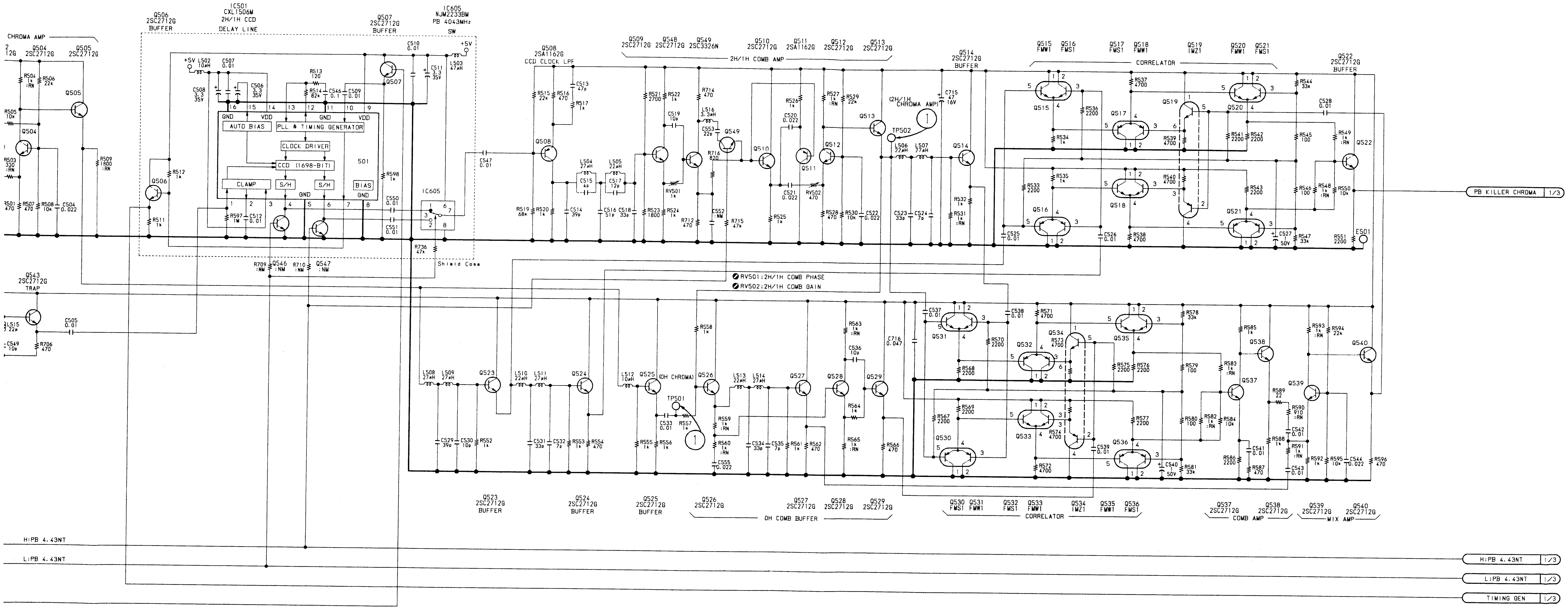


Measurement Condition

3 S-VIDEO IN: color bars (EBU)
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS

∗ mark; B SIDE mount


PB CHROMA AMP
Q503 2SA1162G
Q502 2SC2712G
Q504 2SC2712G
Q505 2SC2712G
+9V
L501 100μH
1/3 PB CTC CHROMA
1/3 GND
1/3 PB +5V IN
1/3 FSC
Q543 2SC2712G TRAP
Q506 2SC2712G BUFFER
IC501 CXL1506M 2H/1H CCD DELAY LINE
Q507 2SC2712G BUFFER
IC605 NJM2233BM PB 4043MHz SW
AUTO BIAS
PLL & TIMING GENERATOR
CLOCK DRIVER
CCD (1698-BIT)
CLAMP
S/H
BIAS
GND
VDD
Shield Case
Q508 2SA1162G CCD CLOCK LPF
Q509 2SC2712G
Q548 2SC2712G
Q549 2SC3326N
Q510 2SC2712G
Q511 2SA1162G
Q512 2SC2712G
Q513 2SC2712G
2H/1H COMB AMP
TP502
RV501:2H/1H COMB PHASE
RV502:2H/1H COMB GAIN
TP501
(OH CHROMA)
Q523 2SC2712G BUFFER
Q524 2SC2712G BUFFER
Q525 2SC2712G BUFFER
Q526 2SC2712G
Q527 2SC2712G
Q528 2SC2712G
Q529 2SC2712G
OH COMB BUFFER
CN212
VO (2/3). 221-26
26 H:NT/L:PAL IN
CN214
NR (1/2). 102-12
1 H:PB 4.43NT OUT
Q550 FMS1 AND GATE
Q545 DTC144EK INVERTER
+5V
H:PB 4.43NT
L:PB 4.43NT

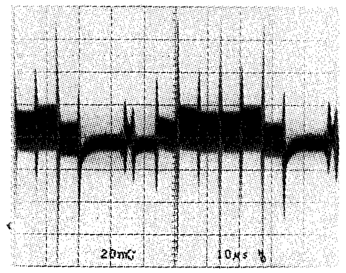

CHROMA AMP
Q504 2SC2712G
Q505 2SC2712G
Q506 2SC2712G BUFFER
IC501 CXL1506M 2H/1H CCD DELAY LINE
Q507 2SC2712G BUFFER
IC605 NJM2233BM PB 4043MHz SW
AUTO BIAS
PLL & TIMING GENERATOR
CLOCK DRIVER
CCD (1698-BIT)
CLAMP
S/H
BIAS
Shield Case
Q508 2SA1162G CCD CLOCK LPF
Q509 2SC2712G
Q548 2SC2712G
Q549 2SC3326N
Q510 2SC2712G
Q511 2SA1162G
Q512 2SC2712G
Q513 2SC2712G
2H/1H COMB AMP
Q514 2SC2712G BUFFER
(2H/1H CHROMA AMP)
TP502
Q515 FMW1
Q516 FMS1
Q517 FMS1
Q518 FMW1
Q519 IMZ1
Q520 FMW1
Q521 FMS1
CORRELATOR
Q522 2SC2712G BUFFER
PB KILLER CHROMA 1/3
RV501:2H/1H COMB PHASE
RV502:2H/1H COMB GAIN
Q543 2SC2712G TRAP
TP501
(0H CHROMA)
Q523 2SC2712G BUFFER
Q524 2SC2712G BUFFER
Q525 2SC2712G BUFFER
Q526 2SC2712G
Q527 2SC2712G
Q528 2SC2712G
Q529 2SC2712G
0H COMB BUFFER
Q530 FMS1
Q531 FMW1
Q532 FMS1
Q533 FMW1
Q534 IMZ1
Q535 FMW1
Q536 FMS1
CORRELATOR
Q537 2SC2712G
Q538 2SC2712G
COMB AMP
Q539 2SC2712G
Q540 2SC2712G
MIX AMP
H:PB 4.43NT
L:PB 4.43NT
H:PB 4.43NT 1/3
L:PB 4.43NT 1/3
TIMING GEN 1/3

CR-42 (2/3)

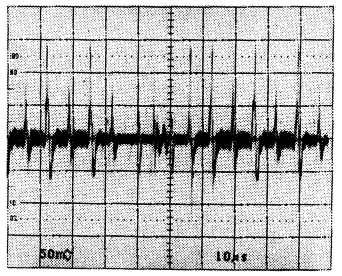
1-644-236-11 (1)
SVO-9620

CR-42 (3/3); PB CHROMA OUTPUT

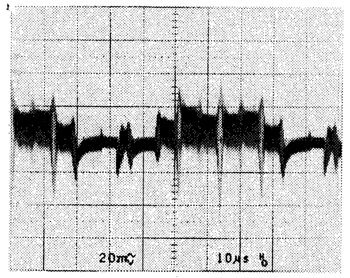
① TP801 (D-1＊) STOP (E-E) mode



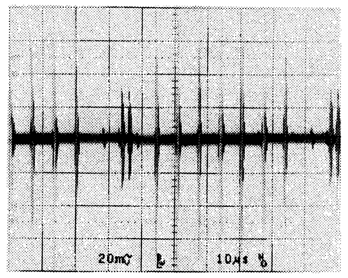
TP850 (C-1＊) PB mode



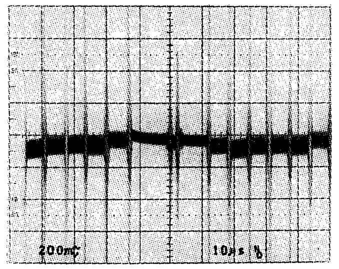
TP801 (D-1＊) PB mode



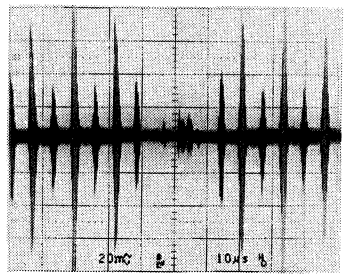
④ TP870 (C-1＊) STOP (E-E) mode



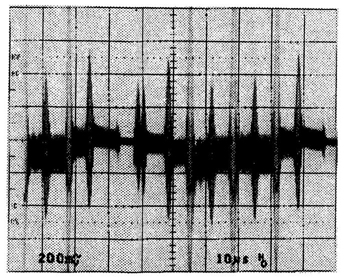
② TP820 (A-1＊) STOP (E-E) mode



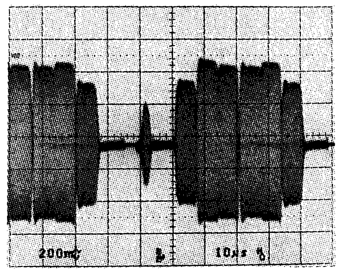
TP870 (C-1＊) PB mode



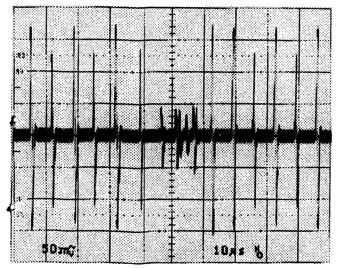
TP820 (A-1＊) PB mode



⑤ TP890 (E-1＊) PB mode



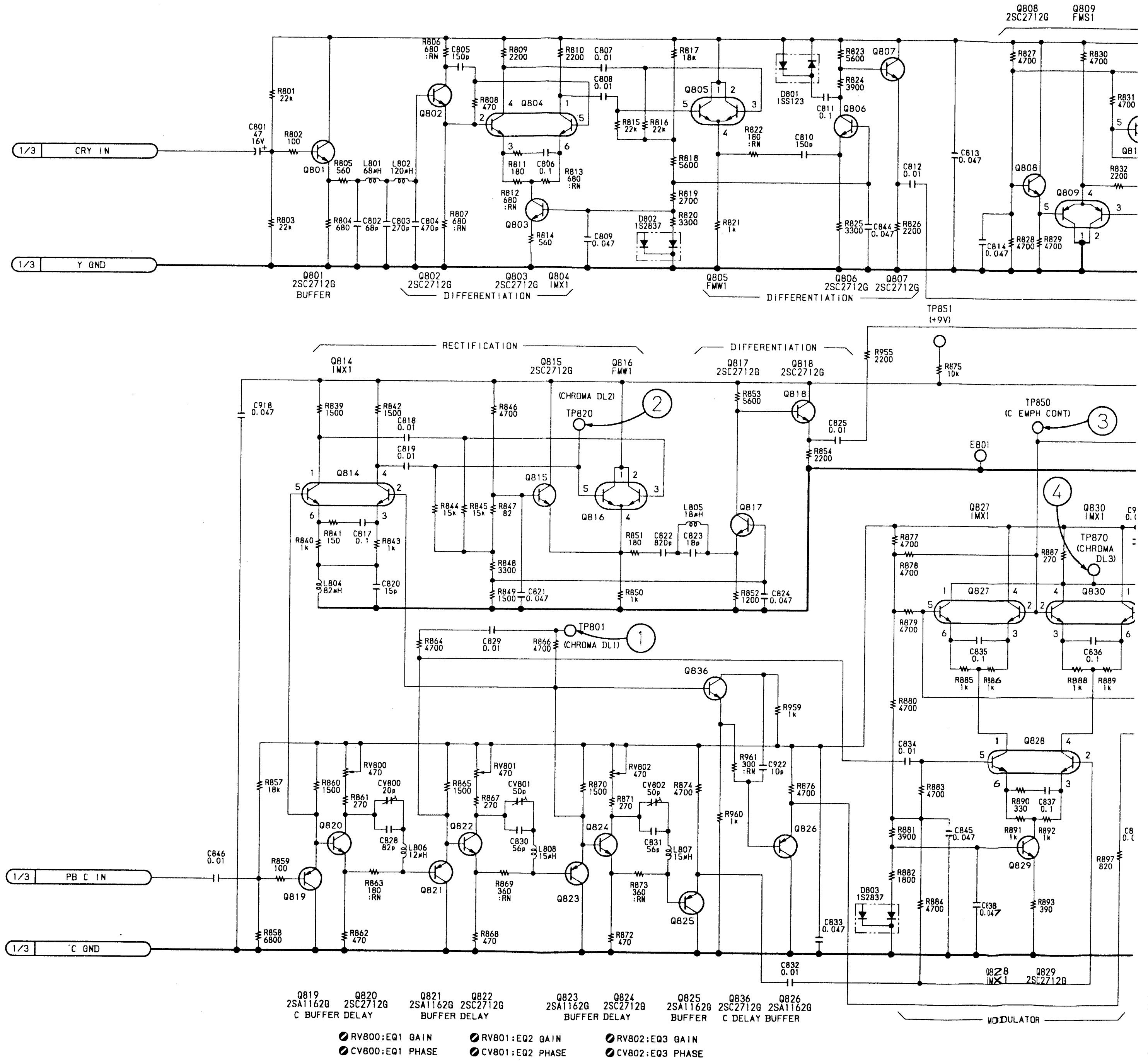
③ TP850 (C-1＊) STOP (E-E) mode

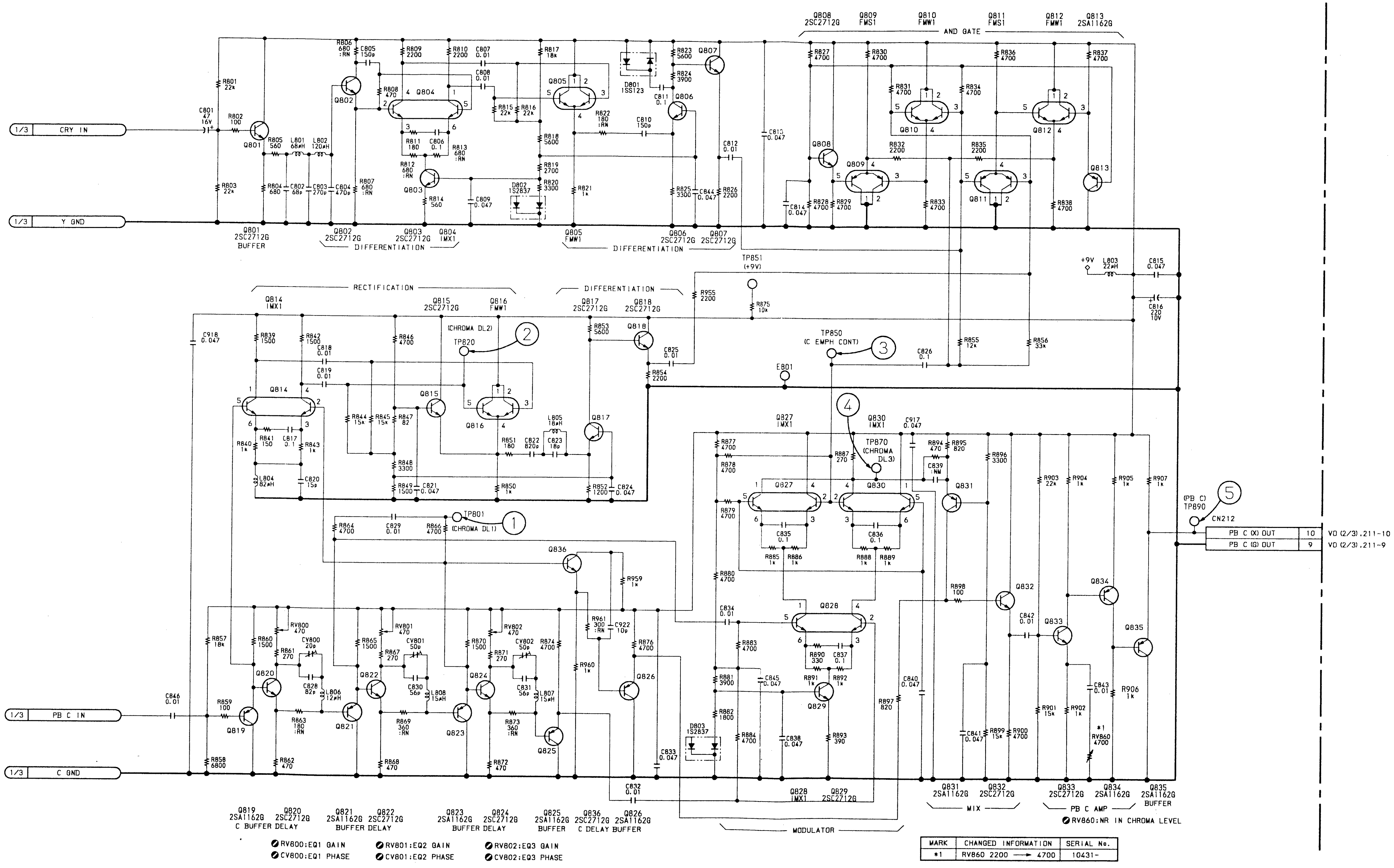


Measurement Condition

S-VIDEO IN: color bars (EBU)
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS

＊ mark; B SIDE mount


1/3 CRY IN
1/3 Y GND
1/3 PB C IN
1/3 C GND
Q801 2SC2712G BUFFER
Q802 2SC2712G
Q803 2SC2712G
Q804 IMX1
DIFFERENTIATION
Q805 FMW1
Q806 2SC2712G
Q807 2SC2712G
DIFFERENTIATION
Q808 2SC2712G
Q809 FMS1
D801 1SS123
D802 1S2837
TP851 (+9V)
RECTIFICATION
Q814 IMX1
Q815 2SC2712G
Q816 FMW1
DIFFERENTIATION
Q817 2SC2712G
Q818 2SC2712G
TP820 (CHROMA DL2)
TP850 (C EMPH CONT)
TP801 (CHROMA DL1)
TP870 (CHROMA DL3)
E801
Q827 IMX1
Q830 IMX1
Q828 IMX1
Q829 2SC2712G
D803 1S2837
MODULATOR
Q819 2SA1162G
Q820 2SC2712G
C BUFFER DELAY
Q821 2SA1162G
Q822 2SC2712G
BUFFER DELAY
Q823 2SA1162G
Q824 2SC2712G
BUFFER DELAY
Q825 2SA1162G BUFFER
Q836 2SC2712G C DELAY
Q826 2SA1162G BUFFER
RV800:EQ1 GAIN
CV800:EQ1 PHASE
RV801:EQ2 GAIN
CV801:EQ2 PHASE
RV802:EQ3 GAIN
CV802:EQ3 PHASE
①
②
③
④

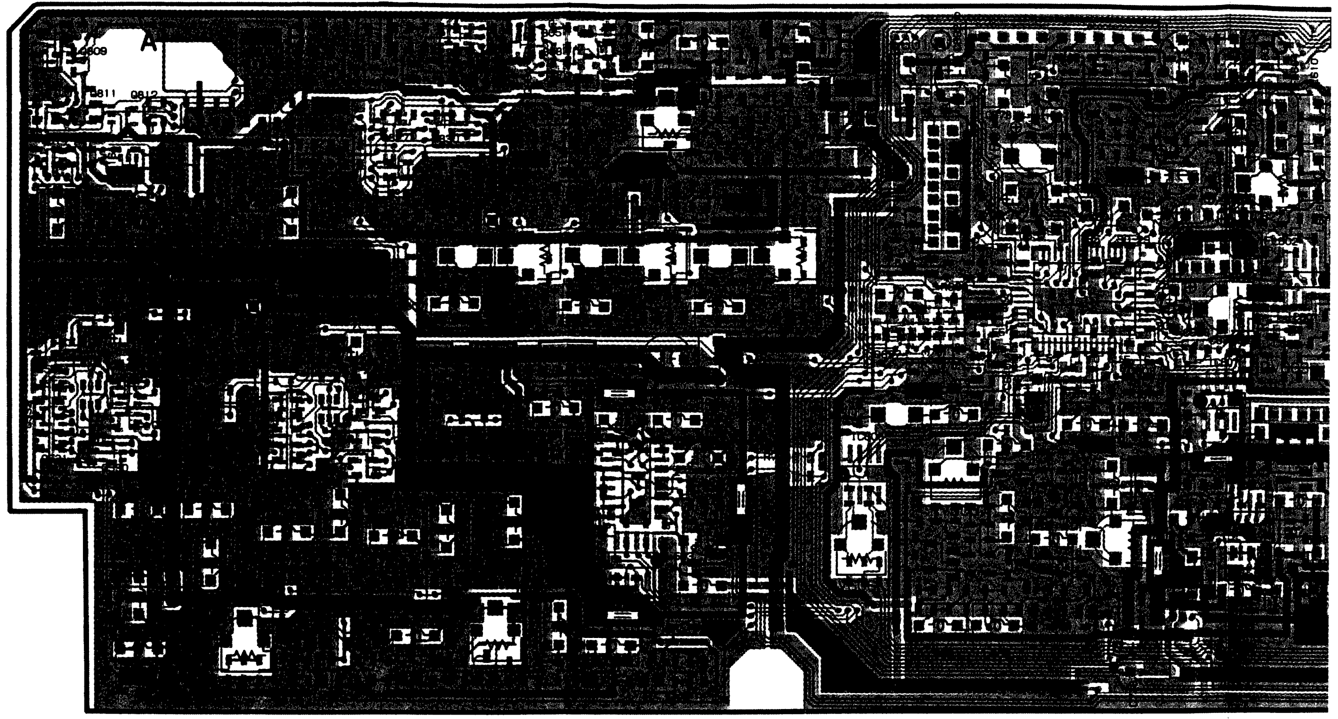

1/3 CRY IN
1/3 Y GND
1/3 PB C IN
1/3 C GND
Q801 2SC2712G BUFFER
Q802 2SC2712G
Q803 2SC2712G
Q804 IMX1
DIFFERENTIATION
Q805 FMW1
Q806 2SC2712G
Q807 2SC2712G
DIFFERENTIATION
Q808 2SC2712G
Q809 FMS1
Q810 FMW1
Q811 FMS1
Q812 FMW1
Q813 2SA1162G
AND GATE
TP851 (+9V)
+9V
RECTIFICATION
Q814 IMX1
Q815 2SC2712G
Q816 FMW1
DIFFERENTIATION
Q817 2SC2712G
Q818 2SC2712G
(CHROMA DL2) TP820 ②
TP850 (C EMPH CONT) ③
E801
TP870 (CHROMA DL3) ④
TP801 (CHROMA DL1) ①
(PB C) TP890 ⑤
CN212
PB C (X) OUT 10 VO (2/3).211-10
PB C (G) OUT 9 VO (2/3).211-9
Q827 IMX1
Q830 IMX1
Q828 IMX1
Q829 2SC2712G
MODULATOR
Q831 2SA1162G
Q832 2SC2712G
MIX
Q833 2SC2712G
Q834 2SA1162G
PB C AMP
Q835 2SA1162G BUFFER
⊘RV860:NR IN CHROMA LEVEL
Q819 2SA1162G
Q820 2SC2712G
C BUFFER DELAY
Q821 2SA1162G
Q822 2SC2712G
BUFFER DELAY
Q823 2SA1162G
Q824 2SC2712G
BUFFER DELAY
Q825 2SA1162G BUFFER
Q836 2SC2712G C DELAY
Q826 2SA1162G BUFFER
⊘RV800:EQ1 GAIN
⊘CV800:EQ1 PHASE
⊘RV801:EQ2 GAIN
⊘CV801:EQ2 PHASE
⊘RV802:EQ3 GAIN
⊘CV802:EQ3 PHASE
D801 1SS123
D802 1S2837
D803 1S2837

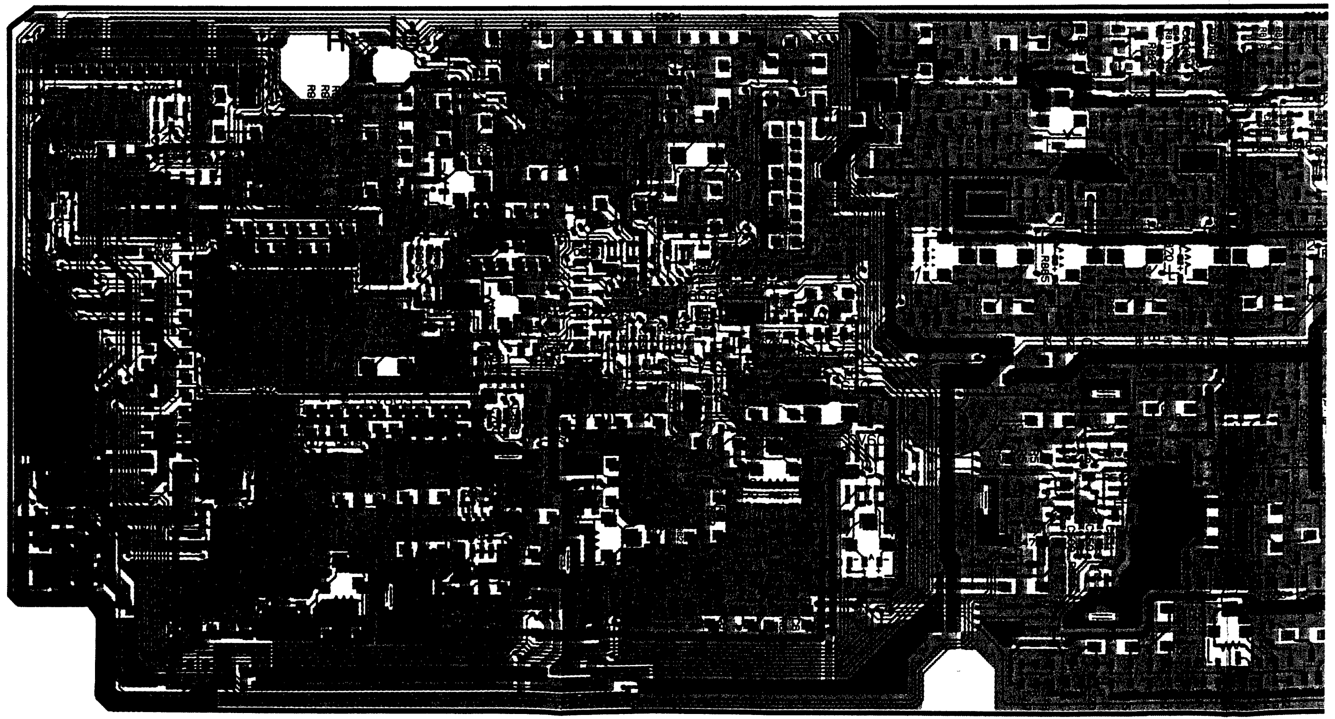
MARK	CHANGED INFORMATION	SERIAL No.
*1	RV860 2200 → 4700	10431-

CR-42 (3/3)

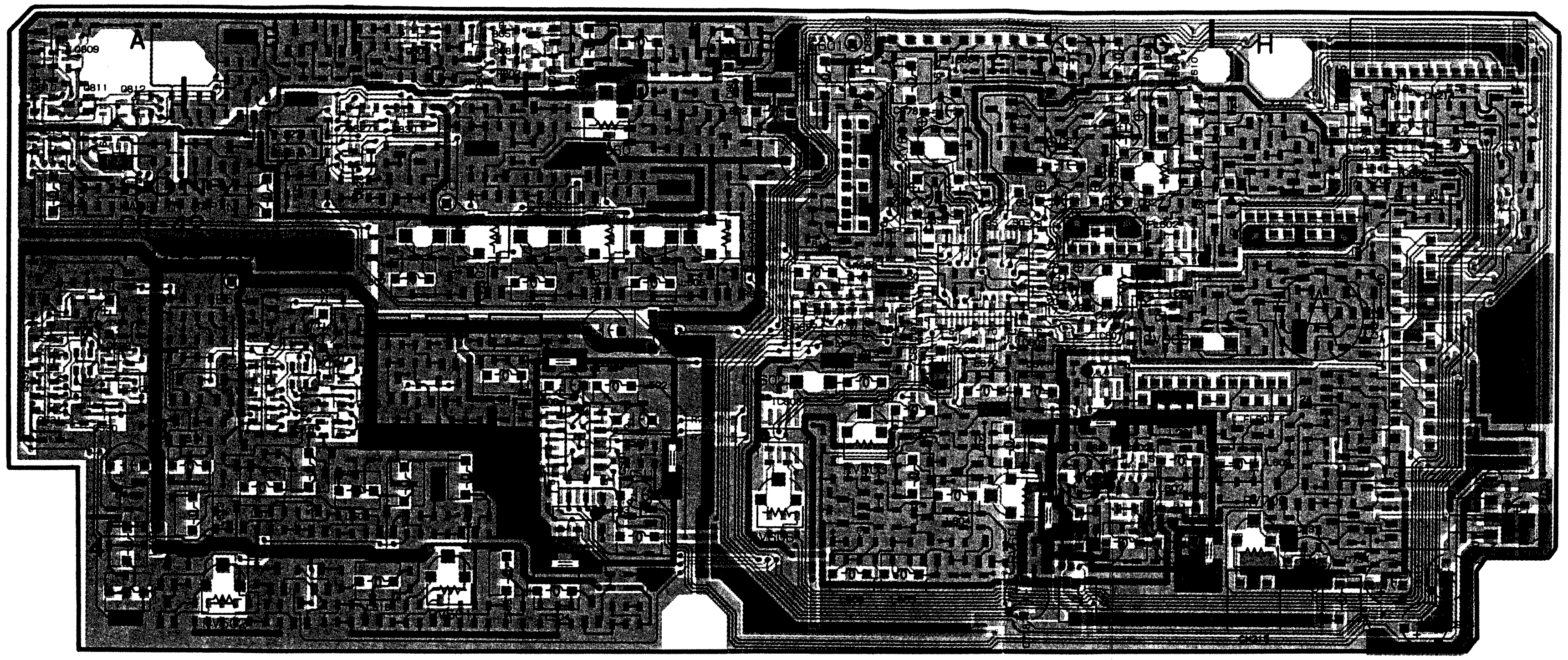
1-644-236-11 (1)
SVO-9620

CR-42 ; CHROMA PROCESS

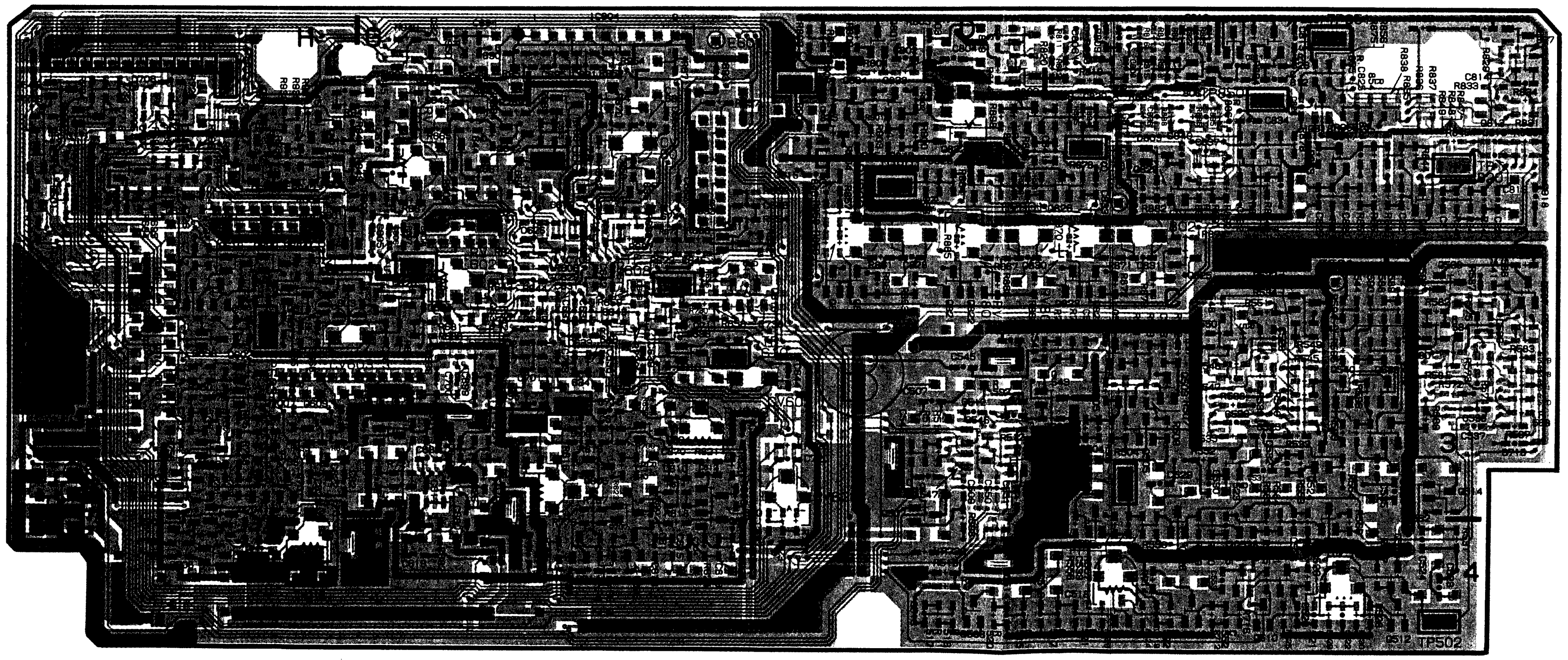




CR-42; CHROMA PROCESS



CR-42 — A SIDE —
1-644-236-11 (1)
SVO-9620



CR-42 — B SIDE —
1-644-236-11 (1)
SVO-9620

CR-42 (1-644-236-11)

CN212	H-2	Q530	A-3	Q807	B-1 *
CN214	J-1	Q531	A-3	Q808	A-1 *
CN215	H-4	Q532	A-3	Q809	A-1
		Q533	A-3	Q810	A-1
CV601	F-1	Q534	A-2	Q811	A-1
CV602	E-3	Q535	A-2	Q812	A-1
CV603	G-2	Q536	A-2	Q813	A-1 *
CV800	D-2	Q537	A-2 *	Q814	A-1
CV801	D-2	Q538	A-2 *	Q815	A-2 *
CV802	C-2	Q539	B-3 *	Q816	A-1
		Q540	B-3 *	Q817	B-1 *
D501	J-2 *	Q541	J-1 *	Q818	B-1 *
D700	H-3 *	Q543	C-3 *	Q819	E-2 *
D801	B-1 *	Q545	J-1 *	Q820	E-2 *
D802	D-1 *	Q548	C-4 *	Q821	D-2 *
D803	C-1 *	Q549	B-4 *	Q822	D-2 *
		Q550	J-2	Q823	C-2 *
E501	B-2	Q601	H-2 *	Q824	C-2 *
E601	E-1	Q602	H-3 *	Q825	C-2 *
E801	C-2	Q604	F-3 *	Q826	C-2 *
E902	J-3	Q605	F-3 *	Q827	B-1
		Q606	F-4 *	Q828	C-2
FL601	H-2	Q607	E-4 *	Q829	C-1 *
FL602	G-2	Q608	G-3 *	Q830	C-1
FL603	H-3	Q609	H-3 *	Q831	D-1 *
FL604	G-1	Q610	H-2 *	Q832	D-1 *
FL605	F-1	Q611	H-1 *	Q833	D-1 *
		Q612	H-1 *	Q834	E-1 *
IC501	D-3	Q613	F-3 *	Q835	E-1 *
IC601	G-2	Q614	E-2 *	Q836	D-1 *
IC602	G-3	Q615	E-2 *	Q837	E-2
IC603	F-2	Q616	E-2 *		
IC604	F-1	Q618	H-2 *	RV501	C-4
IC605	D-4	Q619	H-2 *	RV502	B-4
IC606	J-1	Q620	G-2 *	RV601	F-4
IC607	G-2	Q621	H-2 *	RV602	G-2
IC608	E-3	Q622	H-2 *	RV603	E-3
IC901	J-4	Q623	H-2 *	RV604	G-1
		Q629	J-1 *	RV606	E-3
PS101	J-3	Q630	J-2 *	RV700	H-3
		Q631	G-1 *	RV800	E-2
Q502	C-2 *	Q632	G-3 *	RV801	D-2
Q503	C-3 *	Q634	G-2 *	RV802	C-2
Q504	C-3 *	Q636	F-2 *	RV860	A-1
Q505	C-3 *	Q637	J-2 *		
Q506	D-3 *	Q638	H-3 *	TP501	C-3 *
Q507	D-3 *	Q639	J-1 *	TP502	A-4 *
Q508	D-4 *	Q640	E-3 *	TP601	G-3 *
Q509	C-4 *	Q641	F-1 *	TP602	H-2 *
Q510	B-4 *	Q642	G-1 *	TP603	H-3 *
Q511	B-4 *	Q643	G-1 *	TP605	H-2 *
Q512	A-4 *	Q644	G-1 *	TP606	F-1 *
Q513	A-4 *	Q645	H-1 *	TP607	F-3 *
Q514	A-3 *	Q700	H-3 *	TP608	F-2 *
Q515	B-3	Q701	H-3 *	TP610	E-3 *
Q516	B-3	Q702	H-2 *	TP801	D-1 *
Q517	B-3	Q703	J-3 *	TP820	A-1 *
Q518	C-3	Q704	H-3 *	TP850	C-1 *
Q519	B-3	Q705	J-4 *	TP851	B-1 *
Q520	B-3	Q706	J-4 *	TP870	C-1 *
Q521	B-3	Q707	F-4 *	TP890	E-1 *
Q522	B-2 *	Q708	F-4 *		
Q523	B-3 *	Q710	F-3 *	X601	F-2
Q524	B-3 *	Q801	D-1 *	X701	H-1
Q525	C-4 *	Q802	D-1		
Q526	C-4 *	Q803	D-1 *		
Q527	A-3 *	Q804	C-1		
Q528	B-4 *	Q805	C-1		
Q529	B-4 *	Q806	C-1 *		

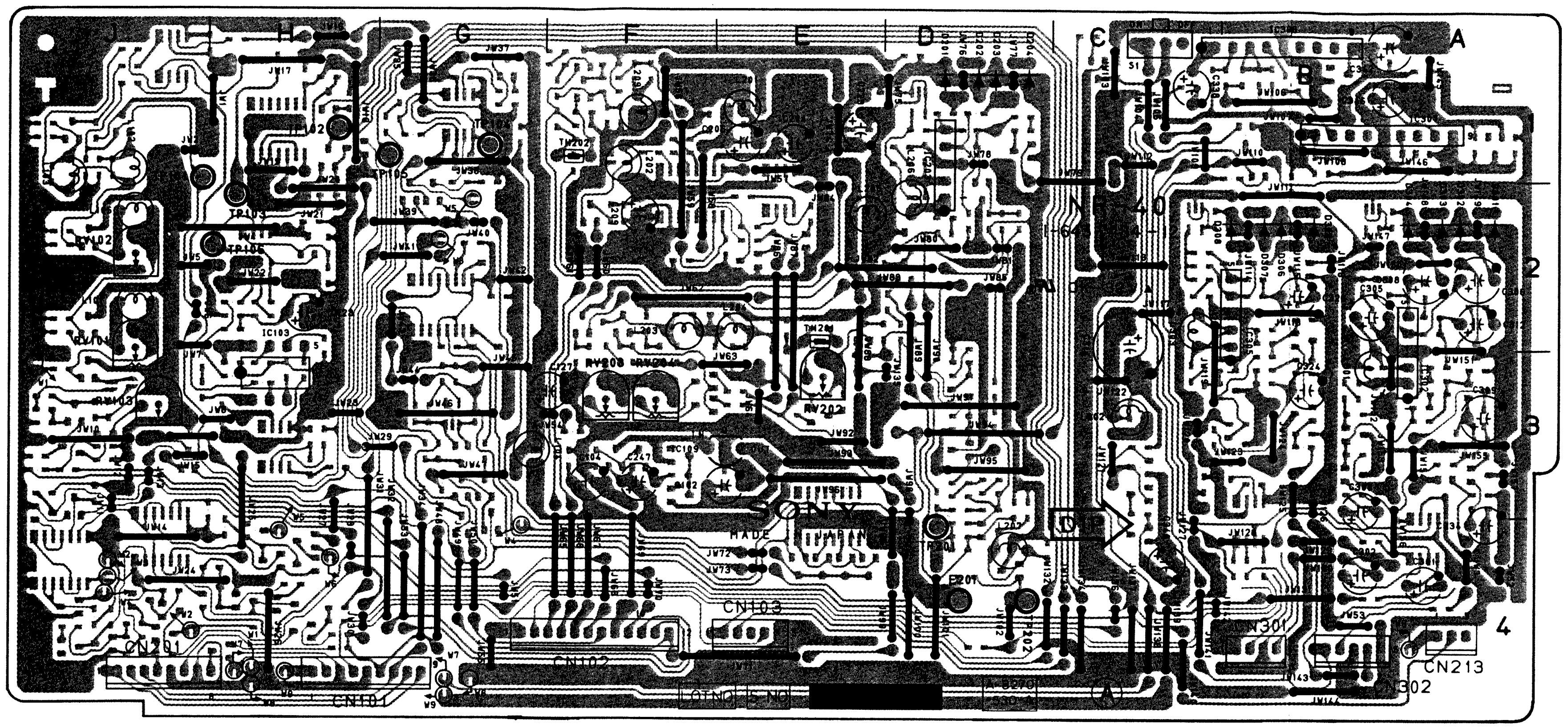
* mark; B SIDE mount

NR-40A; NOISE REDUCER

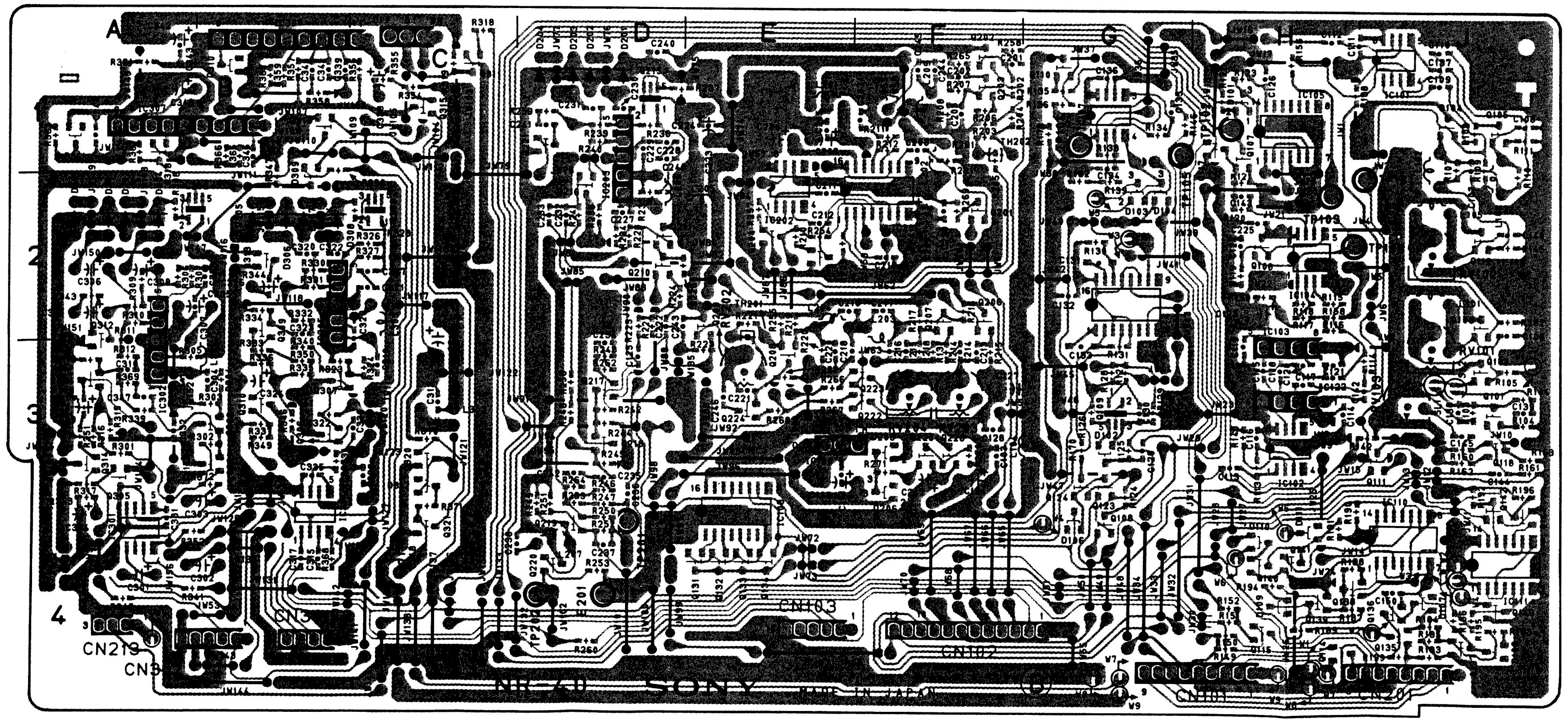
NR-40A (1-643-484-12)

CN101	G-4	
CN201	J-4	
CN301	C-4	
CN302	B-4	
D301	B-2	
D302	B-2	
D303	A-2	
D304	A-2	
D305	D-2	
D306	D-3	
D307	C-3	
D308	C-2	
D309	B-4	*
D310	C-2	*
D311	B-2	*
D312	A-4	*
E201	D-3	
IC301	B-4	*
IC302	B-3	
IC304	C-4	*
IC305	C-3	
IC306	C-1	
IC307	B-1	
Q114	H-4	*
Q115	H-5	*
Q222	D-1	*
Q223	D-1	*
Q224	D-3	*
Q301	B-3	*
Q302	A-4	
Q303	A-2	*
Q304	B-4	*
Q305	B-4	*
Q306	D-3	*
Q307	D-3	*
Q308	C-2	*
Q309	C-4	*
Q310	C-4	*
Q311	D-4	*
Q312	A-3	*
Q313	C-3	*
Q314	A-4	*
Q315	D-2	*
Q318	B-1	*
Q319	C-2	*
Q320	B-4	*
Q321	A-4	*
RV101	J-2	
RV102	J-2	
RV103	J-3	
RV202	E-3	
RV203	F-3	
RV204	F-3	
TP101	J-1	
TP102	H-1	
TP103	H-2	
TP104	G-1	
TP105	G-1	
TP106	H-2	
TP201	D-4	
TP202	D-4	
S1	E-1	
S2	C-1	

* mark; B SIDE mount

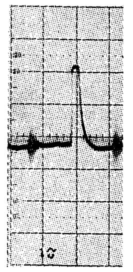

J
H
G
F
E
D
C
B
A
1
2
3
4
CN201
CN101
CN102
CN103
CN301
CN302
CN213
E201
SONY

NR-40A – A SIDE –
1-643-484-12 (1)
SVO-9620

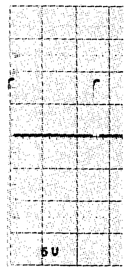

A
B
C
D
E
F
G
H
J
1
2
3
4
CN213
CN101
CN102
CN103
CN201
E201
SONY

NR-40A – B SIDE –
1-643-484-12 (1)
SVO-9620

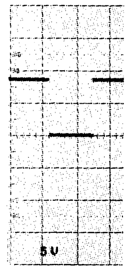
① TP106 (



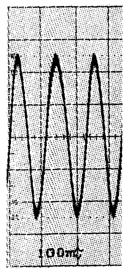
② TP102 (



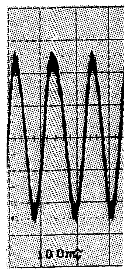
③ TP103 (

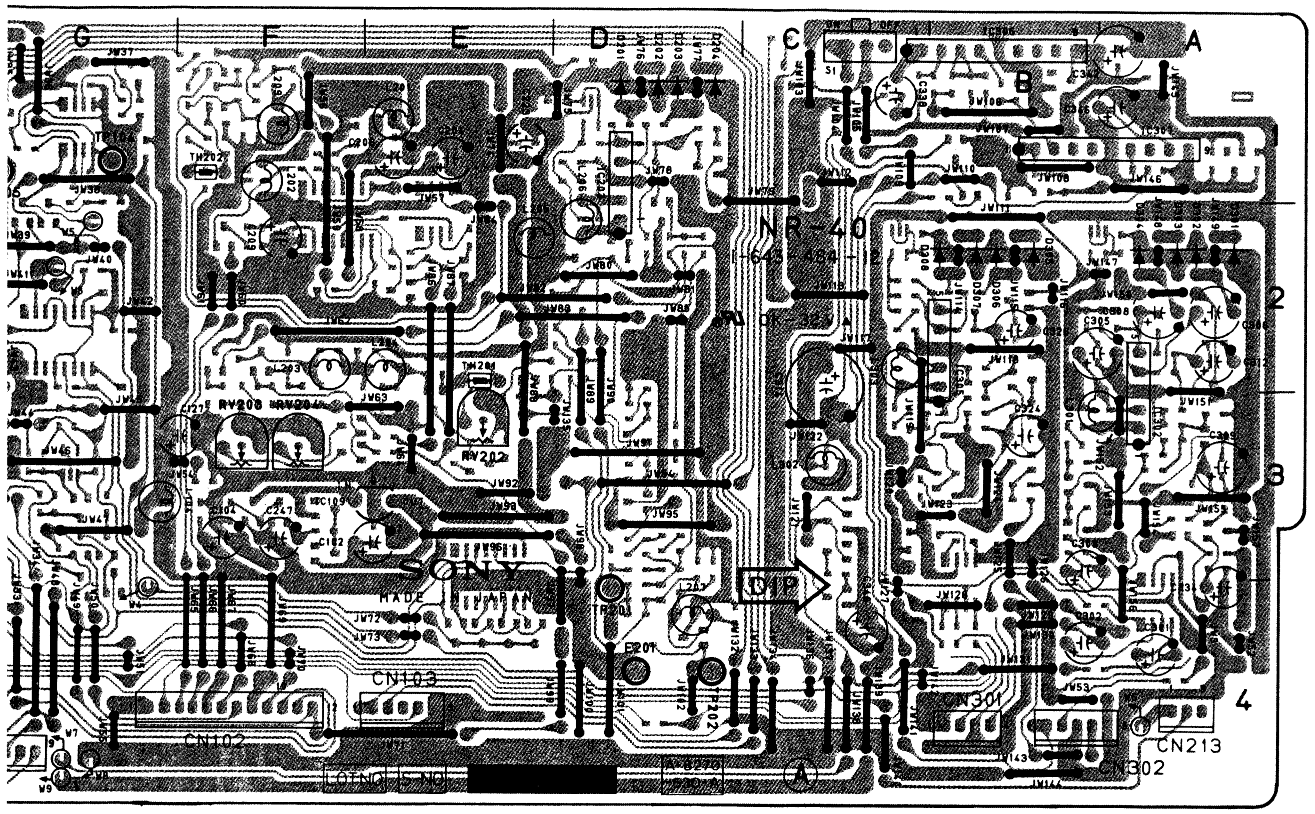


④ TP101 (

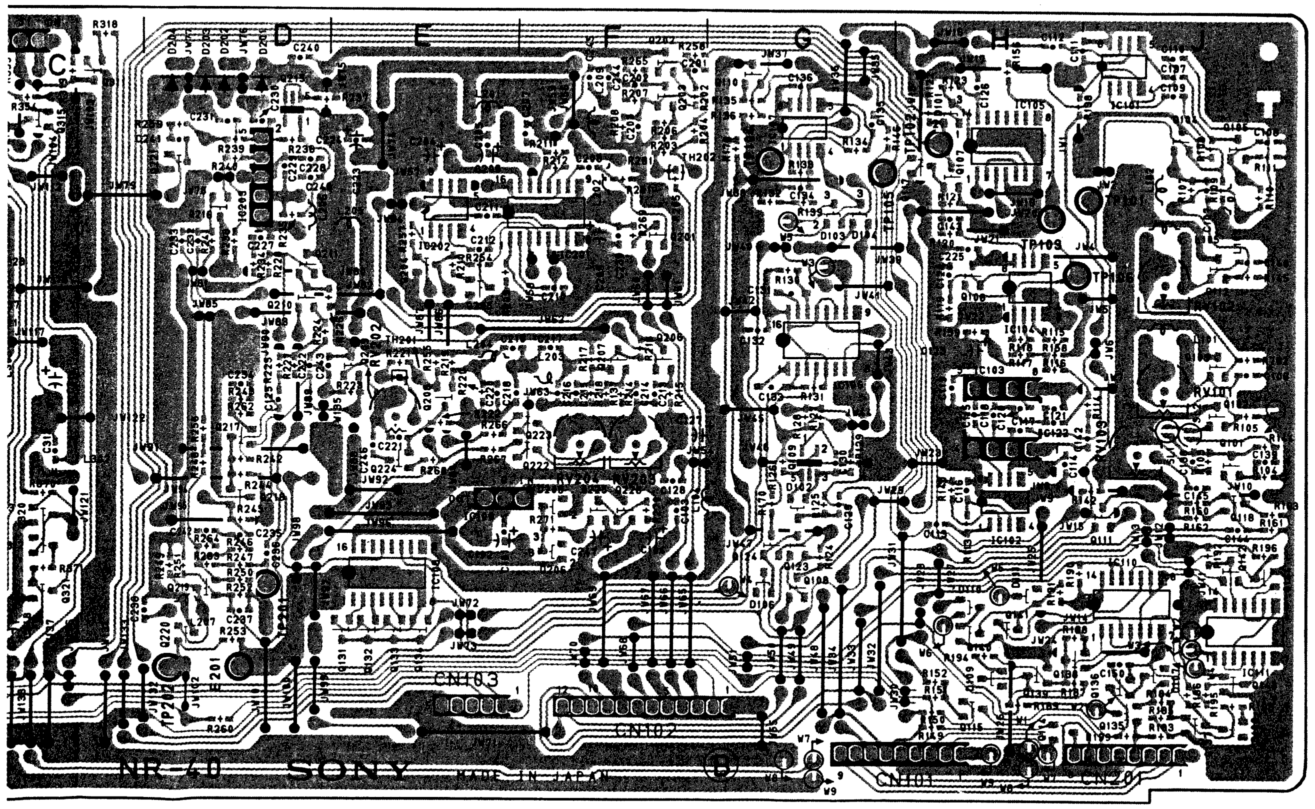


⑤ TP104 (



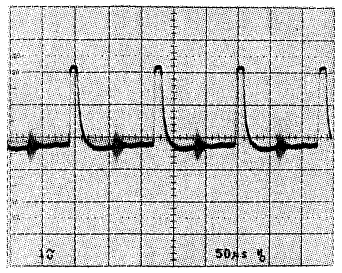

G
F
E
D
C
B
A
1
2
3
4
NR-40
SONY
MADE IN JAPAN
DIP
CN102
CN103
CN213
CN301
CN302

NR-40A — A SIDE —
1-643-484-12 (1)
SVO-9620

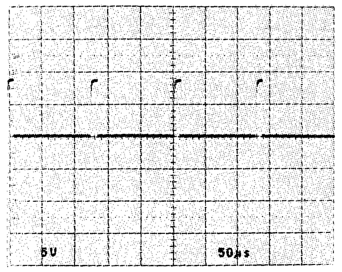

C
D
E
F
G
H
CN103
CN102
CN101
CN201
NR-40
SONY
MADE IN JAPAN

NR-40A — B SIDE —
1-643-484-12 (1)
SVO-9620

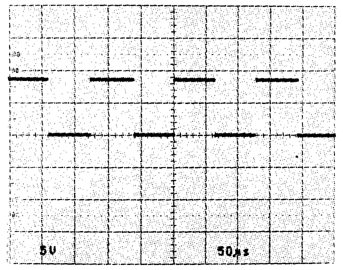
① TP106 (H-2) PB mode



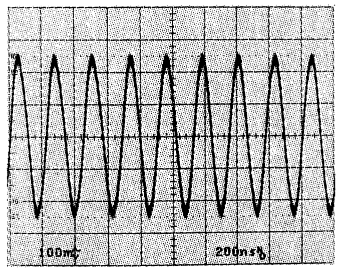
② TP102 (H-1) PB mode



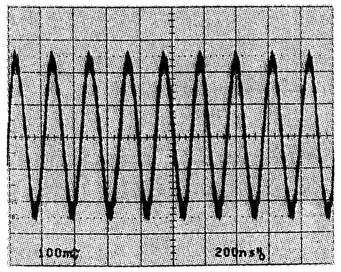
③ TP103 (H-2) PB mode



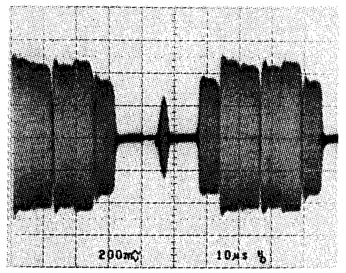
④ TP101 (J-1) PB mode



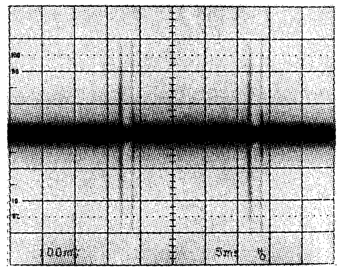
⑤ TP104 (G-1) PB mode



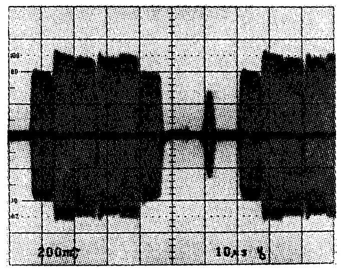
⑥ TP105 (G-1) PB mode



⑦ TP201 (D-4) PB mode

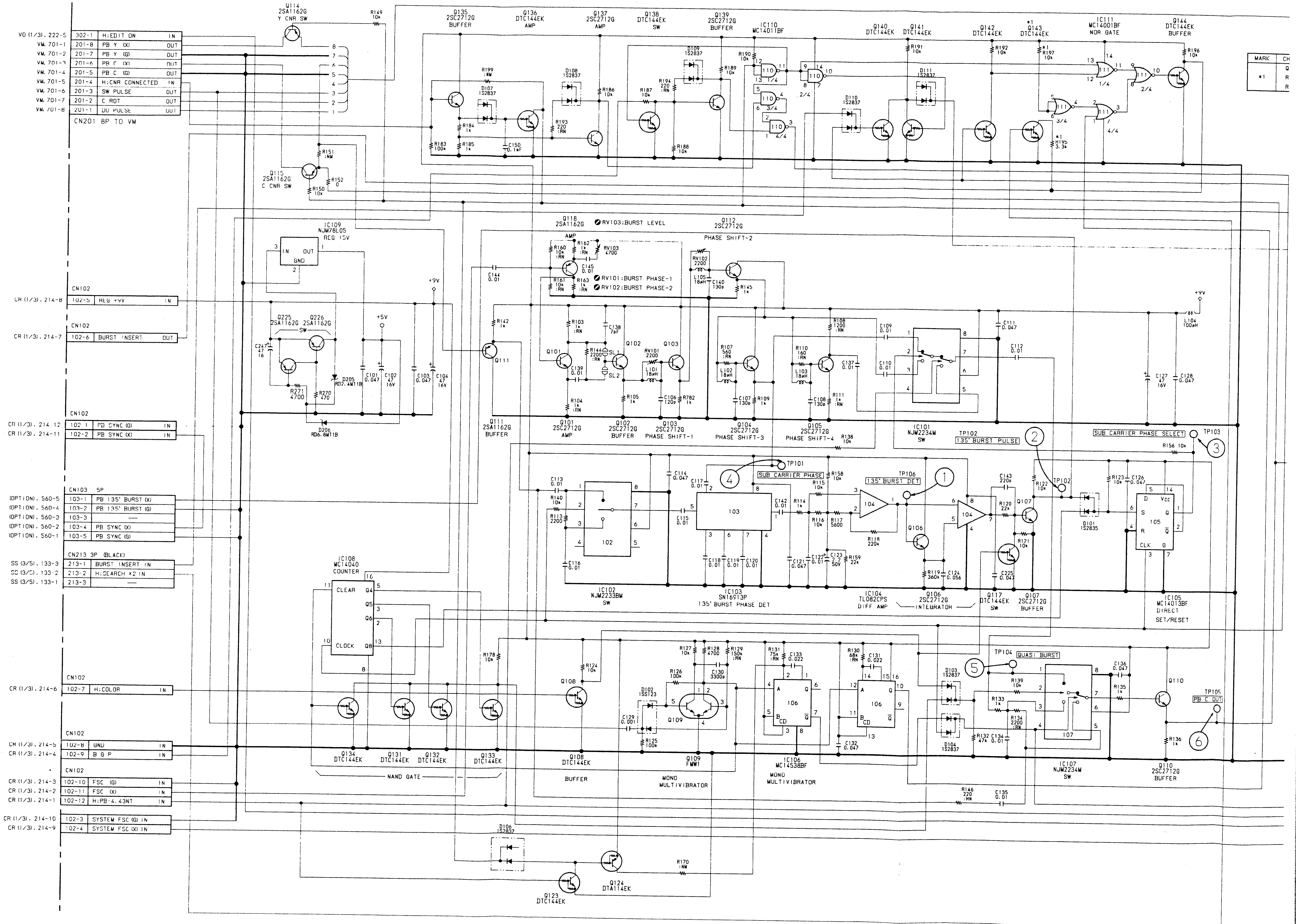


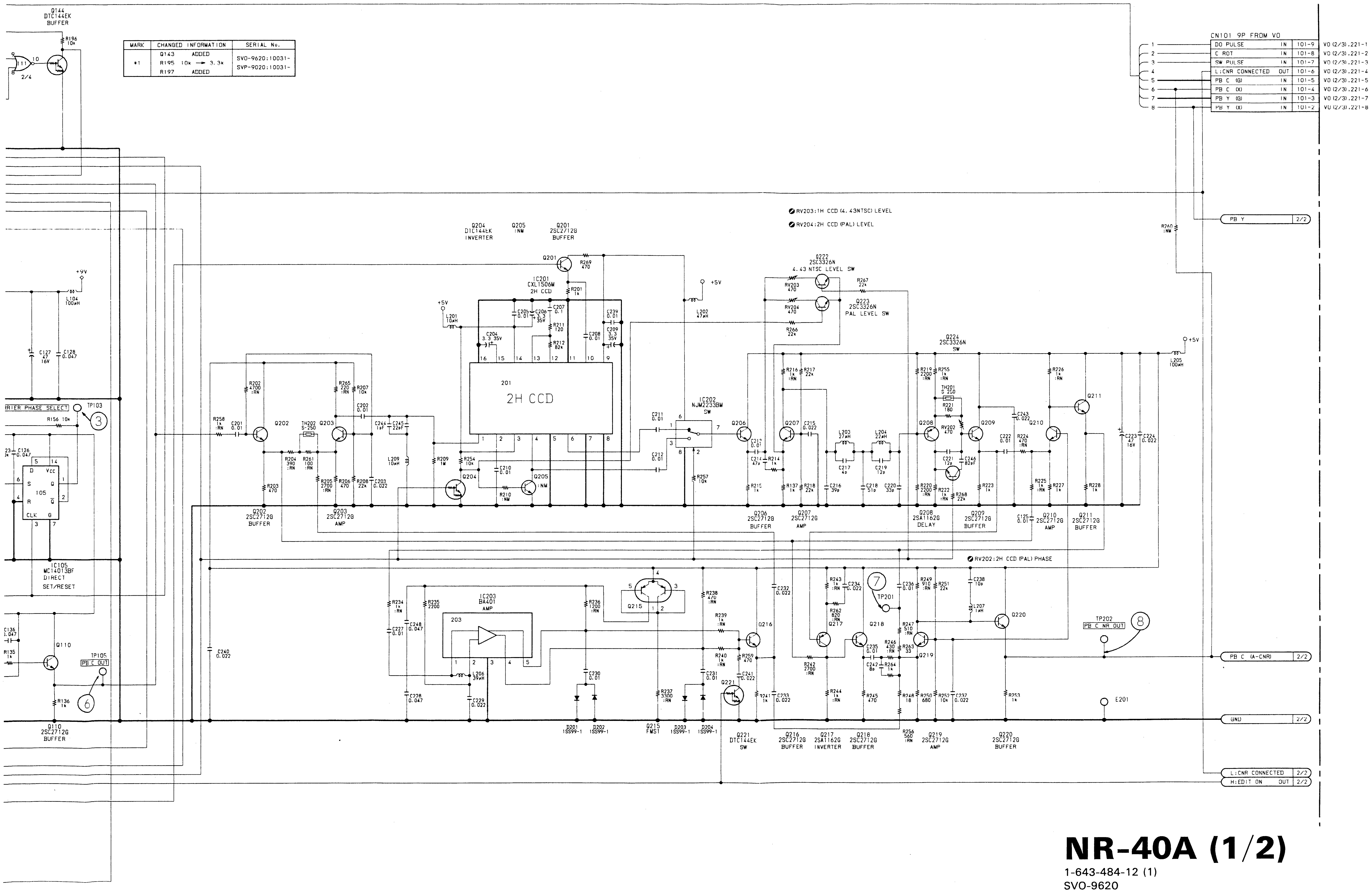
⑧ TP202 (D-4) PB mode



Measurement Condition
PB mode: KRV-45HPS

NR-40A (1/2); NOISE REDUCER


CN201 8P TO VM
302-1 H:EDIT ON IN
201-8 PB Y (X) OUT
201-7 PB Y (G) OUT
201-6 PB C (X) OUT
201-5 PB C (G) OUT
201-4 H:CNR CONNECTED IN
201-3 SW PULSE OUT
201-2 C ROT OUT
201-1 DO PULSE OUT
CN102
102-5 REG +9V IN
102-6 BURST INSERT OUT
102-1 PB SYNC (G) IN
102-2 PB SYNC (X) IN
CN103 5P
103-1 PB 135° BURST (X)
103-2 PB 135° BURST (G)
103-4 PB SYNC (X)
103-5 PB SYNC (G)
CN213 3P (BLACK)
213-1 BURST INSERT IN
213-2 H:SEARCH ×2 IN
102-7 H:COLOR IN
102-8 GND IN
102-9 B G P IN
102-10 FSC (G) IN
102-11 FSC (X) IN
102-12 H:PB-4.43NT IN
102-3 SYSTEM FSC (G) IN
102-4 SYSTEM FSC (X) IN
Q114 2SA1162G Y CNR SW
Q115 2SA1162G C CNR SW
Q135 2SC2712G BUFFER
Q136 DTC144EK AMP
Q137 2SC2712G AMP
Q138 DTC144EK SW
Q139 2SC2712G BUFFER
IC110 MC14011BF
Q140 DTC144EK
Q141 DTC144EK
Q142 DTC144EK
Q143 DTC144EK
IC111 MC14001BF NOR GATE
Q144 DTC144EK BUFFER
IC109 NJM78L05 REG +5V
Q225 2SA1162G
Q226 2SA1162G
Q118 2SA1162G AMP
RV103:BURST LEVEL
RV101:BURST PHASE-1
RV102:BURST PHASE-2
Q112 2SC2712G PHASE SHIFT-2
Q111 2SA1162G BUFFER
Q101 2SC2712G AMP
Q102 2SC2712G BUFFER
Q103 2SC2712G PHASE SHIFT-1
Q104 2SC2712G PHASE SHIFT-3
Q105 2SC2712G PHASE SHIFT-4
IC101 NJM2234M SW
TP102 135° BURST PULSE
SUB CARRIER PHASE SELECT
TP103
TP101 SUB CARRIER PHASE
TP106 135° BURST DET
IC102 NJM2233BM SW
IC103 SN16913P 135° BURST PHASE DET
IC104 TL082CPS DIFF AMP
Q106 2SC2712G INTEGRATOR
Q117 DTC144EK SW
Q107 2SC2712G BUFFER
IC105 MC14013BF DIRECT SET/RESET
IC108 MC14040 COUNTER
Q134 DTC144EK
Q131 DTC144EK
Q132 DTC144EK
Q133 DTC144EK
NAND GATE
Q108 DTC144EK BUFFER
Q109 FMW1 MONO MULTIVIBRATOR
IC106 MC14538BF MONO MULTIVIBRATOR
TP104 QUASI BURST
IC107 NJM2234M SW
Q110 2SC2712G BUFFER
TP105 PB C OUT
Q123 DTC144EK
Q124 DTA114EK
D106 1S2837
+9V
+5V
MARK
*1
① ② ③ ④ ⑤ ⑥
A B C D E F G H

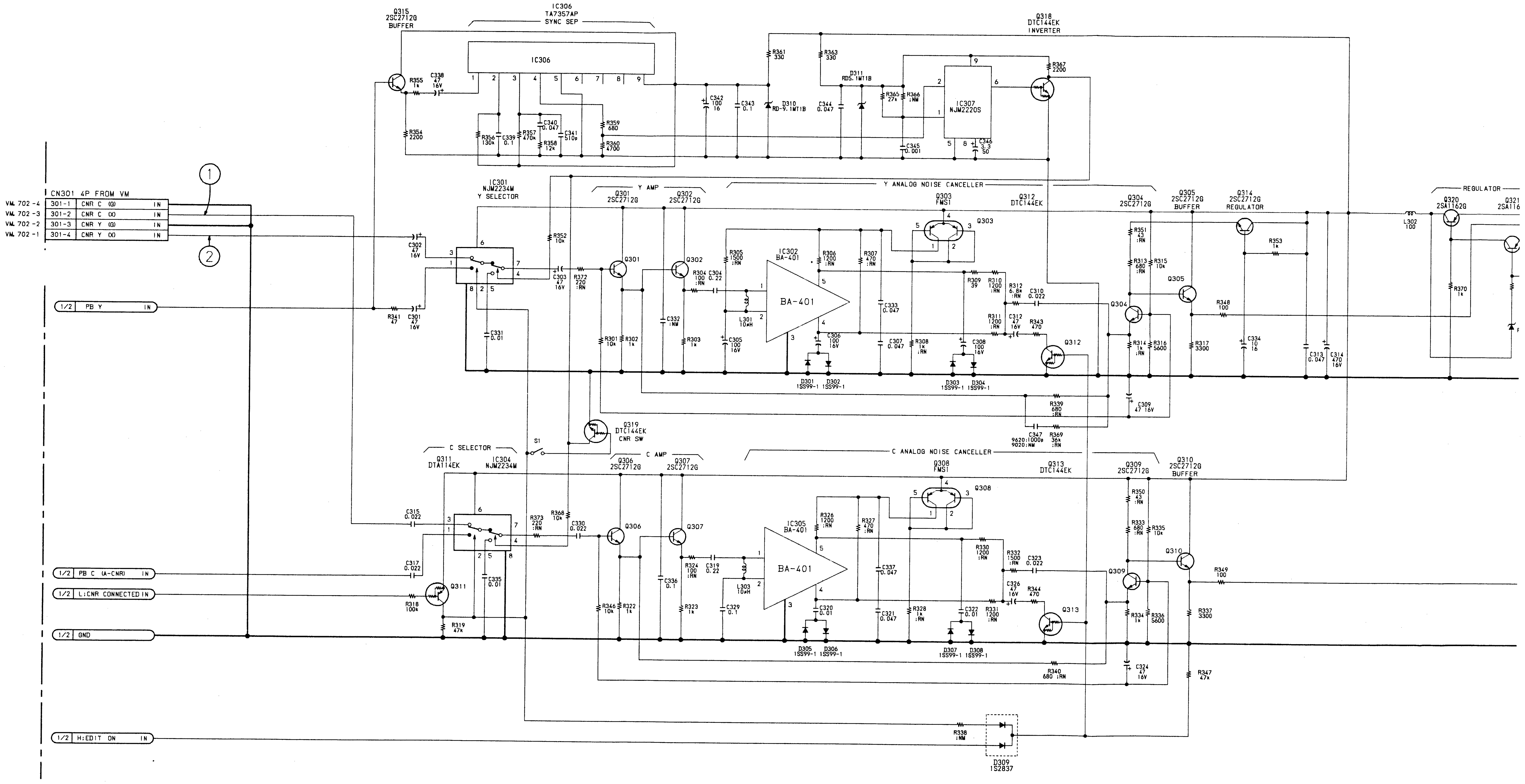

Q144
DTC144EK
BUFFER
R196 10k
2/4
CN101 9P FROM VO
1 DO PULSE IN 101-9 VO (2/3),221-1
2 C ROT IN 101-8 VO (2/3),221-2
3 SW PULSE IN 101-7 VO (2/3),221-3
4 L;CNR CONNECTED OUT 101-6 VO (2/3),221-4
5 PB C (G) IN 101-5 VO (2/3),221-5
6 PB C (X) IN 101-4 VO (2/3),221-6
7 PB Y (G) IN 101-3 VO (2/3),221-7
8 PB Y (X) IN 101-2 VO (2/3),221-8
RV203:1H CCD (4.43NTSC) LEVEL
RV204:2H CCD (PAL) LEVEL
PB Y 2/2
R260 :NM
Q204 DTC144EK INVERTER
Q205 :NM
Q201 2SC2712G BUFFER
R269 470
IC201 CXL1506M 2H CCD
R201 1k
+5V
L201 10µH
C204 3.3 35V
C205 0.01
C206 3.3 35V
C207 0.1
R211 120
R212 82k
C208 0.01
C239 0.01
C209 3.3 35V
201
2H CCD
L202 47µH
IC202 NJM2233BM SW
C211 0.01
C212 0.01
R257 10k
+9V
L104 100µH
C127 47 16V
C128 0.047
CARRIER PHASE SELECT
TP103
3
R156 10k
C126 0.047
105
IC105 MC14013BF DIRECT SET/RESET
R258 1k :RN
C201 0.01
Q202
R202 4700 :RN
TH202 S-250
Q203
R265 220 :RN
R207 10k
C202 0.01
C244 1pF
C245 22pF
L209 10µH
R209 1M
R254 10k
R204 390 :RN
R261 100 :RN
R205 2700 :RN
R206 470
R208 22k
C203 0.022
R203 470
C210 0.01
R210 :NM
Q202 2SC2712G BUFFER
Q203 2SC2712G AMP
Q222 2SC3326N 4.43 NTSC LEVEL SW
RV203 470
RV204 470
R266 22k
R267 22k
Q223 2SC3326N PAL LEVEL SW
Q224 2SC3326N SW
+5V
L205 100µH
Q206
C213 0.01
C214 47p
R214 1k
R215 1k
Q207
R216 1k :RN
R217 22k
C215 0.022
R137 1k
R218 22k
L203 27µH
L204 22µH
C216 39p
C217 4p
C218 51p
C219 12p
C220 33p
R219 2200 :RN
R255 1k :RN
TH201 S 250
R221 180
Q208
RV202 470
Q209
C221 12p
C246 82pF
R220 2200 :RN
R222 1k :RN
R268 22k
R223 1k
C243 0.022
C222 0.01
R224 470 :RN
Q210
R225 1k :RN
R226 1k :RN
R227 1k
Q211
R228 1k
C223 47 16V
C224 0.022
Q206 2SC2712G BUFFER
Q207 2SC2712G AMP
Q208 2SA1162G DELAY
Q209 2SC2712G BUFFER
C125 0.01
Q210 2SC2712G AMP
Q211 2SC2712G BUFFER
RV202:2H CCD (PAL) PHASE
IC203 BA401 AMP
203
R234 1k :RN
C227 0.01
R235 2200
C248 0.047
L206 39µH
C228 0.047
C229 0.022
R236 1200 :RN
C230 0.01
D201 1SS99-1
D202 1SS99-1
Q215
Q215 FMS1
R237 3300 :RN
R238 470 :RN
C231 0.01
D203 1SS99-1
D204 1SS99-1
R239 1k :RN
R240 1k :RN
Q216
R259 470
C241 0.022
Q221
Q221 DTC144EK SW
R241 1k
C232 0.022
C233 0.022
R243 1k :RN
C234 0.022
R262 820 :RN
Q217
Q218
R242 2700 :RN
R244 1k :RN
R245 470
7
TP201
C235 0.01
C242 8p
R264 1k
R246 430 :RN
R263 33
R247 510 :RN
R248 18
R256 560 :RN
C236 0.01
R249 910 :RN
R251 22k
Q219
R250 680
R252 10k
C237 0.022
C238 10p
L207 1µH
Q220
R253 1k
Q216 2SC2712G BUFFER
Q217 2SA1162G INVERTER
Q218 2SC2712G BUFFER
Q219 2SC2712G AMP
Q220 2SC2712G BUFFER
TP202
PB C NR OUT
8
PB C (A-CNR) 2/2
E201
GND 2/2
L:CNR CONNECTED 2/2
H:EDIT ON OUT 2/2
Q110
C136 0.047
R135 1k
TP105
PB C OUT
6
R136 1k
Q110 2SC2712G BUFFER
C240 0.022
1
2
3
4
5
H
I
J
K
L
M
N
O
P

MARK	CHANGED INFORMATION	SERIAL No.
*1	Q143 ADDED R195 10k → 3.3k R197 ADDED	SVO-9620;10031- SVP-9020;10031-

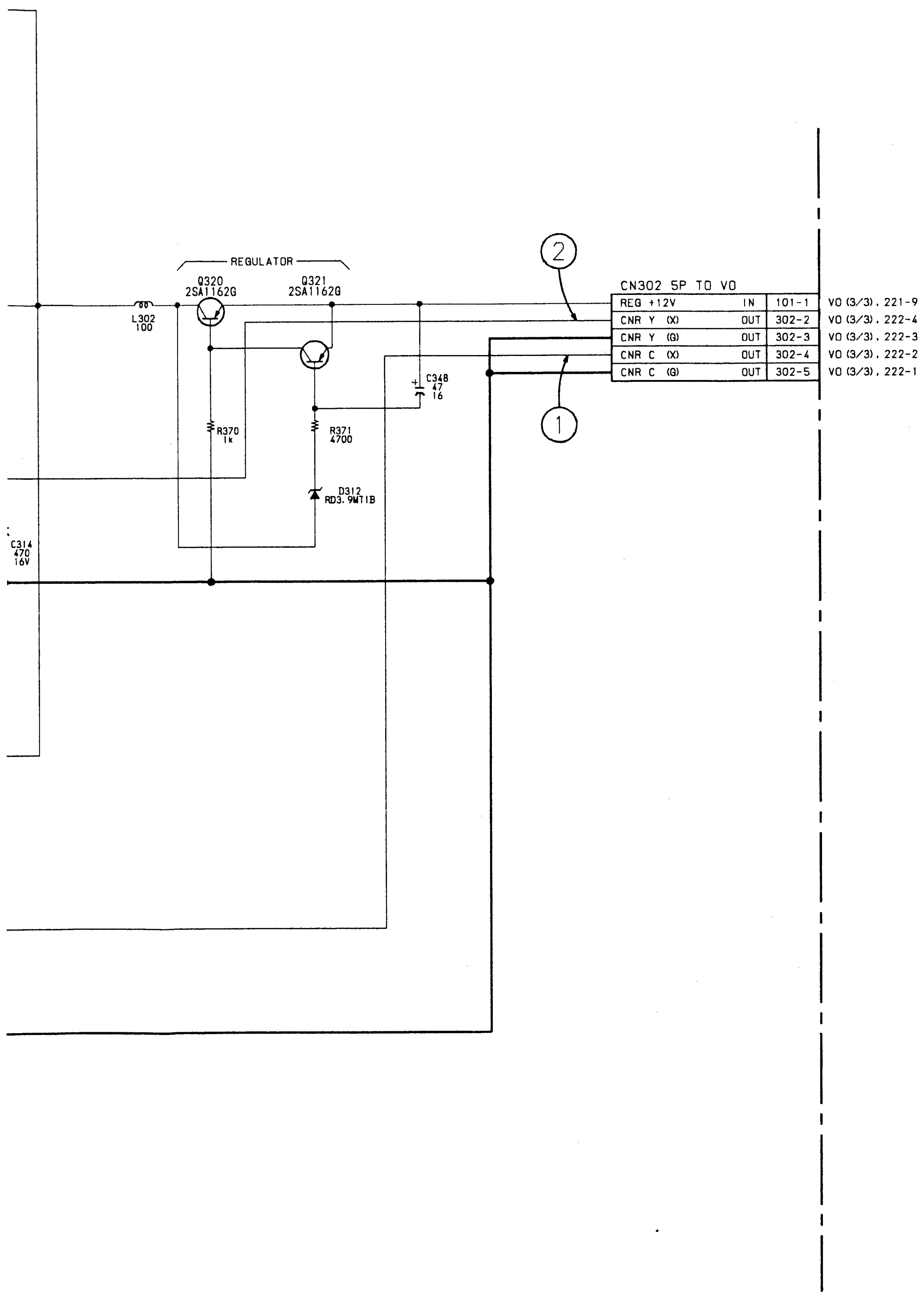
NR-40A (1/2)

1-643-484-12 (1)
SVO-9620

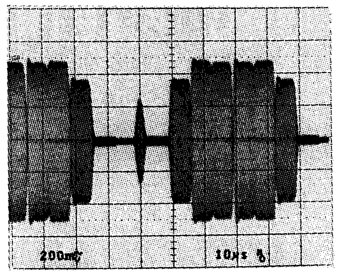
NR-40A (2/2); NOISE REDUCER


Q315 2SC2712G BUFFER
IC306 TA7357AP SYNC SEP
IC306
Q318 DTC144EK INVERTER
IC307 NJM2220S
D311 RDS.1M11B
D310 RD-9.1M11B
IC301 NJM2234M Y SELECTOR
CN301 4P FROM VM
VM 702-4 301-1 CNR C (G) IN
VM 702-3 301-2 CNR C (X) IN
VM 702-2 301-3 CNR Y (G) IN
VM 702-1 301-4 CNR Y (X) IN
①
②
1/2 PB Y IN
Y AMP
Q301 2SC2712G
Q302 2SC2712G
Y ANALOG NOISE CANCELLER
IC302 BA-401
BA-401
Q303 FMS1
Q312 DTC144EK
Q304 2SC2712G
Q305 2SC2712G BUFFER
Q314 2SC2712G REGULATOR
REGULATOR
Q320 2SA1162G
L302 100
D301 1SS99-1
D302 1SS99-1
D303 1SS99-1
D304 1SS99-1
Q319 DTC144EK CNR SW
S1
C SELECTOR
Q311 DTA114EK
IC304 NJM2234M
C AMP
Q306 2SC2712G
Q307 2SC2712G
C ANALOG NOISE CANCELLER
IC305 BA-401
BA-401
Q308 FMS1
Q313 DTC144EK
Q309 2SC2712G
Q310 2SC2712G BUFFER
1/2 PB C (A-CNR) IN
1/2 L:CNR CONNECTED IN
1/2 GND
1/2 H:EDIT ON IN
D305 1SS99-1
D306 1SS99-1
D307 1SS99-1
D308 1SS99-1
D309 1S2837
R338 :NM

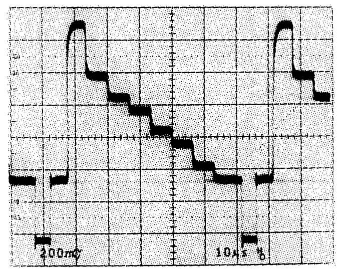
A | B | C | D | E | F | G | H |


REGULATOR
Q320
2SA1162G
Q321
2SA1162G
L302
100
R370
1k
R371
4700
D312
RD3.9MT1B
C348
47
16
C314
470
16V
②
①
CN302 5P TO VO
REG +12V IN 101-1 VO (3/3), 221-9
CNR Y (X) OUT 302-2 VO (3/3), 222-4
CNR Y (G) OUT 302-3 VO (3/3), 222-3
CNR C (X) OUT 302-4 VO (3/3), 222-2
CNR C (G) OUT 302-5 VO (3/3), 222-1

① ∗CN301-2 (C-4) PB mode (dnr- ON)
CN302-4 (B-4) PB mode



② ∗CN301-4 (C-4) PB mode (dnr- ON)
CN302-2 (B-4) PB mode



Measurement Condition

PB mode: KRV-45HPS

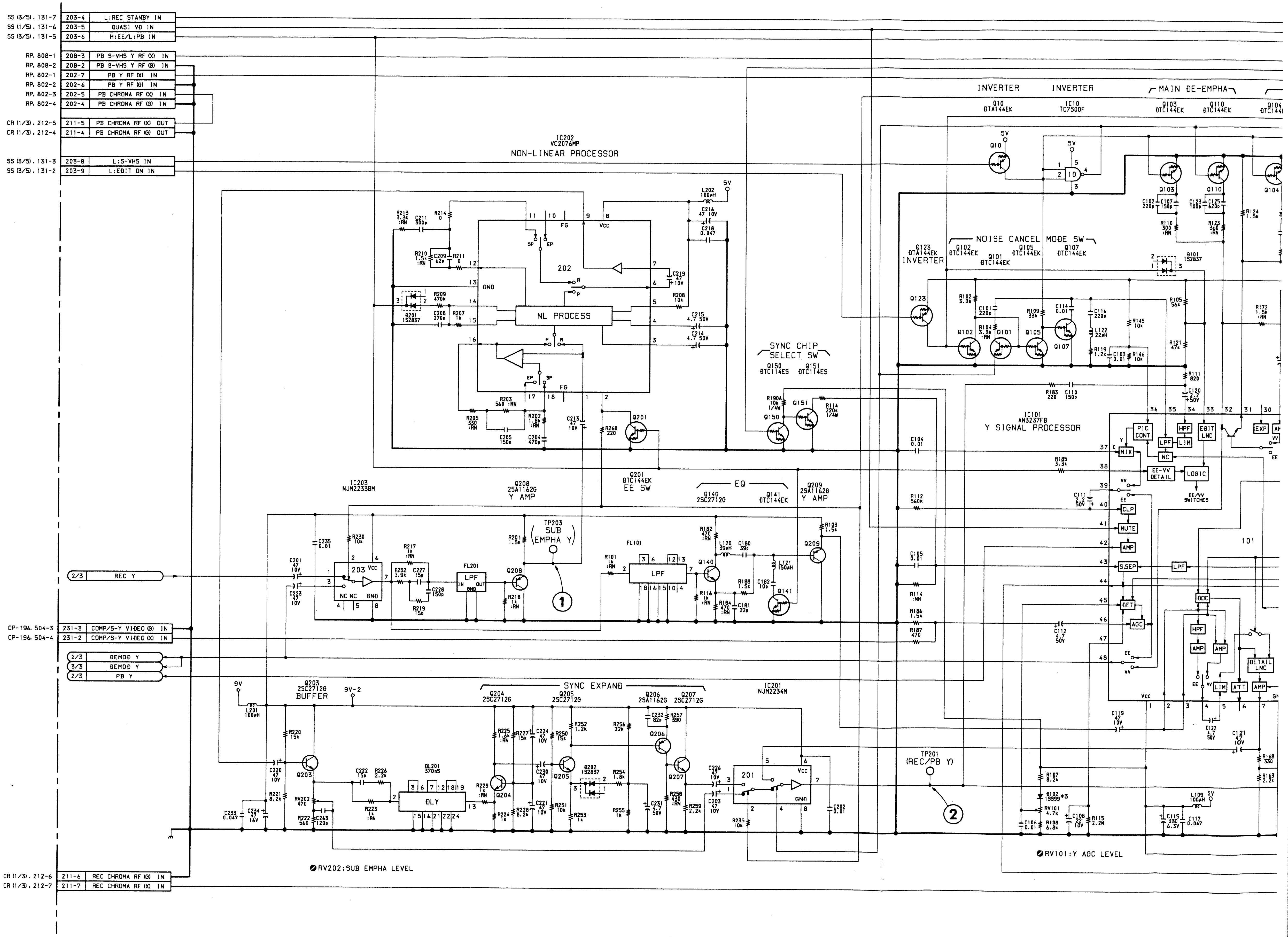
∗dnr- on (Refer to Menu Items.)

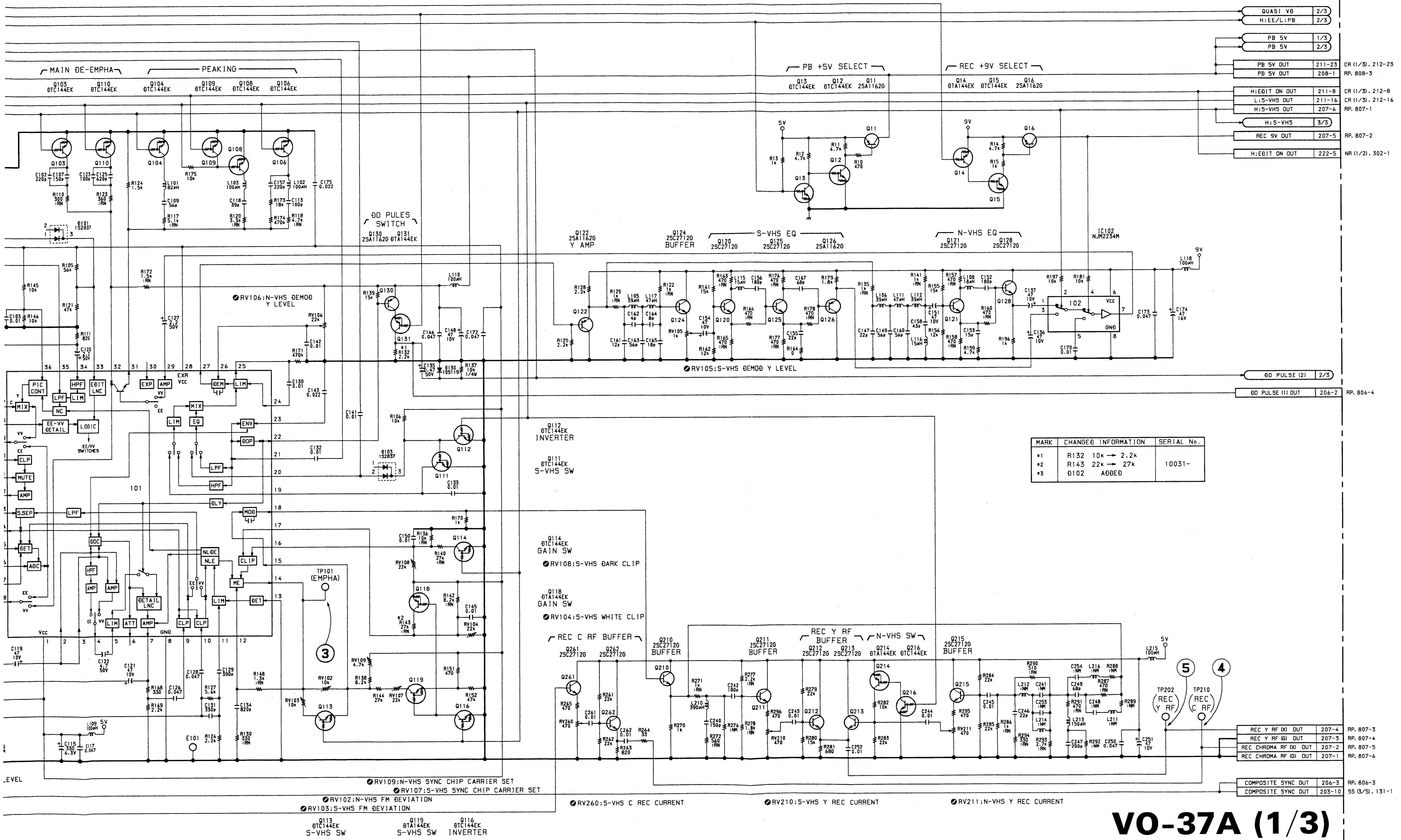
SVBK-150 board is mounted.

NR-40A (2/2)

1-643-484-12 (1)
SVO-9620

VO-37A (1/3); Y PROCESS


SS (3/5). 131-7 203-4 L:REC STANBY IN
SS (1/5). 131-6 203-5 QUASI VD IN
SS (3/5). 131-5 203-6 H:EE/L:PB IN
RP. 808-1 208-3 PB S-VHS Y RF (X) IN
RP. 808-2 208-2 PB S-VHS Y RF (G) IN
RP. 802-1 202-7 PB Y RF (X) IN
RP. 802-2 202-6 PB Y RF (G) IN
RP. 802-3 202-5 PB CHROMA RF (X) IN
RP. 802-4 202-4 PB CHROMA RF (G) IN
CR (1/3). 212-5 211-5 PB CHROMA RF (X) OUT
CR (1/3). 212-4 211-4 PB CHROMA RF (G) OUT
SS (3/5). 131-3 203-8 L:S-VHS IN
SS (3/5). 131-2 203-9 L:EDIT ON IN
2/3 REC Y
CP-196. 504-3 231-3 COMP/S-Y VIDEO (G) IN
CP-196. 504-4 231-2 COMP/S-Y VIDEO (X) IN
2/3 DEMOD Y
3/3 DEMOD Y
2/3 PB Y
CR (1/3). 212-6 211-6 REC CHROMA RF (G) IN
CR (1/3). 212-7 211-7 REC CHROMA RF (X) IN
IC202 VC2076MP
NON-LINEAR PROCESSOR
NL PROCESS
202
IC203 NJM2233BM
Q208 2SA1162G Y AMP
TP203 (SUB EMPHA Y)
①
Q201 DTC144EK EE SW
EQ
Q140 2SC2712G
Q141 DTC144EK
Q209 2SA1162G Y AMP
FL101 LPF
FL201 LPF
SYNC CHIP SELECT SW
Q150 DTC114ES
Q151 DTC114ES
INVERTER
Q10 DTA144EK
IC10 TC7S00F
MAIN DE-EMPHA
Q103 DTC144EK
Q110 DTC144EK
Q104 DTC144
Q123 DTA144EK INVERTER
NOISE CANCEL MODE SW
Q102 DTC144EK
Q101 DTC144EK
Q105 DTC144EK
Q107 DTC144EK
D101 1S2837
IC101 AN3237FB
Y SIGNAL PROCESSOR
PIC CONT
HPF
EDIT LNC
EXP
MIX
LPF
LIM
NC
EE-VV DETAIL
LOGIC
EE/VV SWITCHES
CLP
MUTE
AMP
S.SEP
LPF
GET
AGC
DOC
DETAIL LNC
LIM
ATT
AMP
9V
Q203 2SC2712G BUFFER
9V-2
DL201 370nS
DLY
SYNC EXPAND
Q204 2SC2712G
Q205 2SC2712G
Q206 2SA1162G
Q207 2SC2712G
IC201 NJM2234M
201
TP201 (REC/PB Y)
②
RV202:SUB EMPHA LEVEL
RV101:Y AGC LEVEL


MAIN DE-EMPHA
PEAKING
Q103 DTC144EK
Q110 DTC144EK
Q104 DTC144EK
Q109 DTC144EK
Q108 DTC144EK
Q106 DTC144EK
PB +5V SELECT
Q13 DTC144EK
Q12 DTC144EK
Q11 2SA1162G
REC +9V SELECT
Q14 DTA144EK
Q15 DTC144EK
Q16 2SA1162G
DD PULES SWITCH
Q130 2SA1162G
Q131 DTA144EK
Q122 2SA1162G Y AMP
Q124 2SC2712G BUFFER
S-VHS EQ
Q120 2SC2712G
Q125 2SC2712G
Q126 2SA1162G
N-VHS EQ
Q121 2SC2712G
Q128 2SC2712G
IC102 NJM2234M
RV106:N-VHS DEMOD Y LEVEL
RV105:S-VHS DEMOD Y LEVEL
Q112 DTC144EK INVERTER
Q111 DTC144EK S-VHS SW
Q114 DTC144EK GAIN SW
RV108:S-VHS DARK CLIP
Q118 DTA144EK GAIN SW
RV104:S-VHS WHITE CLIP
TP101 (EMPHA)
101
REC C RF BUFFER
Q261 2SC2712G
Q262 2SC2712G
Q210 2SC2712G BUFFER
Q211 2SC2712G BUFFER
REC Y RF BUFFER
Q212 2SC2712G
Q213 2SC2712G
N-VHS SW
Q214 DTA144EK
Q216 DTC144EK
Q215 2SC2712G BUFFER
TP202 (REC Y RF)
TP210 (REC C RF)
③
④
⑤
RV109:N-VHS SYNC CHIP CARRIER SET
RV107:S-VHS SYNC CHIP CARRIER SET
RV102:N-VHS FM DEVIATION
RV103:S-VHS FM DEVIATION
RV260:S-VHS C REC CURRENT
RV210:S-VHS Y REC CURRENT
RV211:N-VHS Y REC CURRENT
Q113 DTC144EK S-VHS SW
Q119 DTA144EK S-VHS SW
Q116 DTC144EK INVERTER
QUASI VD 2/3
H:EE/L:PB 2/3
PB 5V 1/3
PB 5V 2/3
PB 5V OUT 211-23 CR (1/3). 212-23
PB 5V OUT 208-1 RP. 808-3
H:EDIT ON OUT 211-8 CR (1/3). 212-8
L:S-VHS OUT 211-16 CR (1/3). 212-16
H:S-VHS OUT 207-6 RP. 807-1
H:S-VHS 3/3
REC 9V OUT 207-5 RP. 807-2
H:EDIT ON OUT 222-5 NR (1/2). 302-1
DD PULSE (2) 2/3
DD PULSE (1) OUT 206-2 RP. 806-4
REC Y RF (X) OUT 207-4 RP. 807-3
REC Y RF (G) OUT 207-3 RP. 807-4
REC CHROMA RF (X) OUT 207-2 RP. 807-5
REC CHROMA RF (G) OUT 207-1 RP. 807-6
COMPOSITE SYNC OUT 206-3 RP. 806-3
COMPOSITE SYNC OUT 203-10 SS (3/5). 131-1
LEVEL
H
I
J
K
L
M
N
O
P

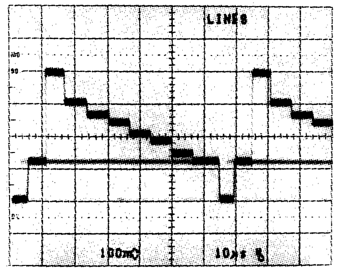
MARK	CHANGED INFORMATION	SERIAL No.
*1	R132 10k → 2.2k	10031-
*2	R143 22k → 27k	
*3	D102 ADDED	

VO-37A (1/3)

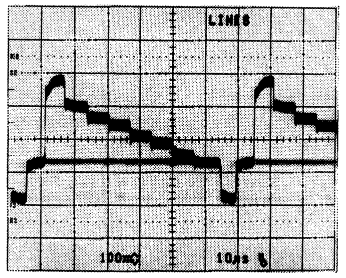
1-641-585-12 (1)
SVO-9620

VO-37A (1/3)

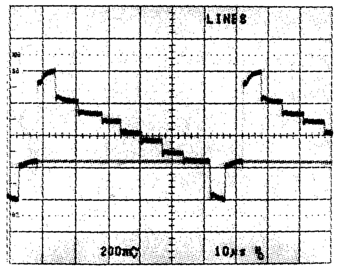
① TP203 (G-5*) STOP (E-E) mode



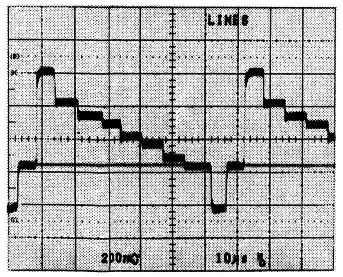
TP203 (G-5*) PB mode



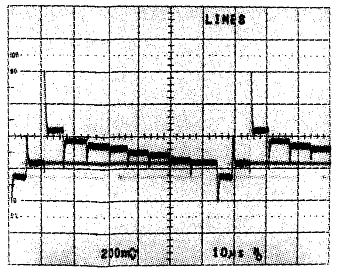
② TP201 (E-5*) STOP (E-E) mode



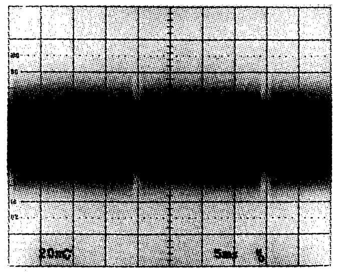
TP201 (E-5*) PB mode



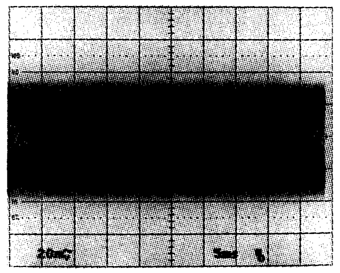
③ TP101 (K-3*) STOP (E-E) mode



④ TP210 (J-1*) STOP (E-E) mode



⑤ TP202 (L-1*) STOP (E-E) mode



Measurement Condition

S-VIDEO IN: color bars (EBU)

STOP (E-E) mode: S-VHS

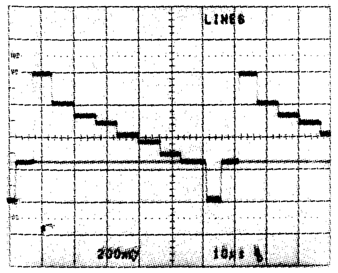
PB mode: KRV-45HPS

* mark; B SIDE mount

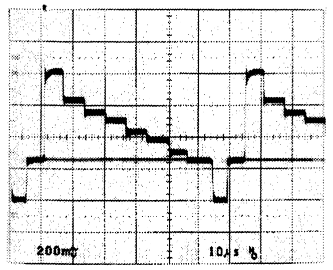
13-15

VO-37A (2/3); DIGITAL COMB FILTER & PB Y/C OUTPUT

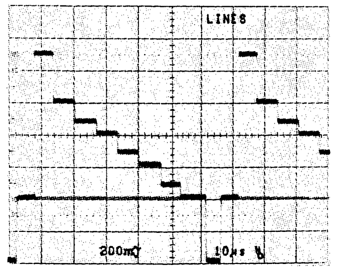
① TP301 (C-5∗) STOP (E-E) mode



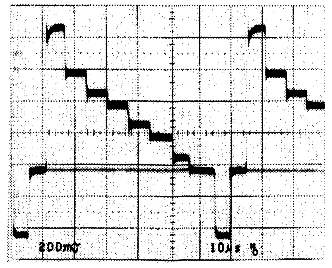
TP301 (C-5∗) PB mode



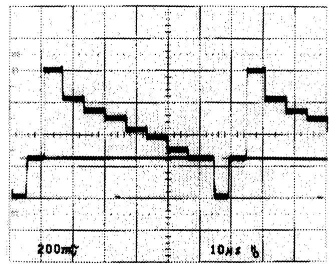
② TP302 (A-5∗) STOP (E-E) mode



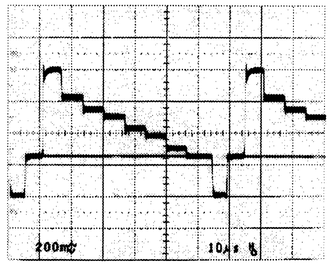
TP302 (A-5∗) PB mode



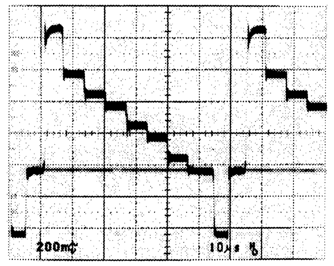
③ TP303 (D-4∗) STOP (E-E) mode



TP303 (D-4∗) PB mode



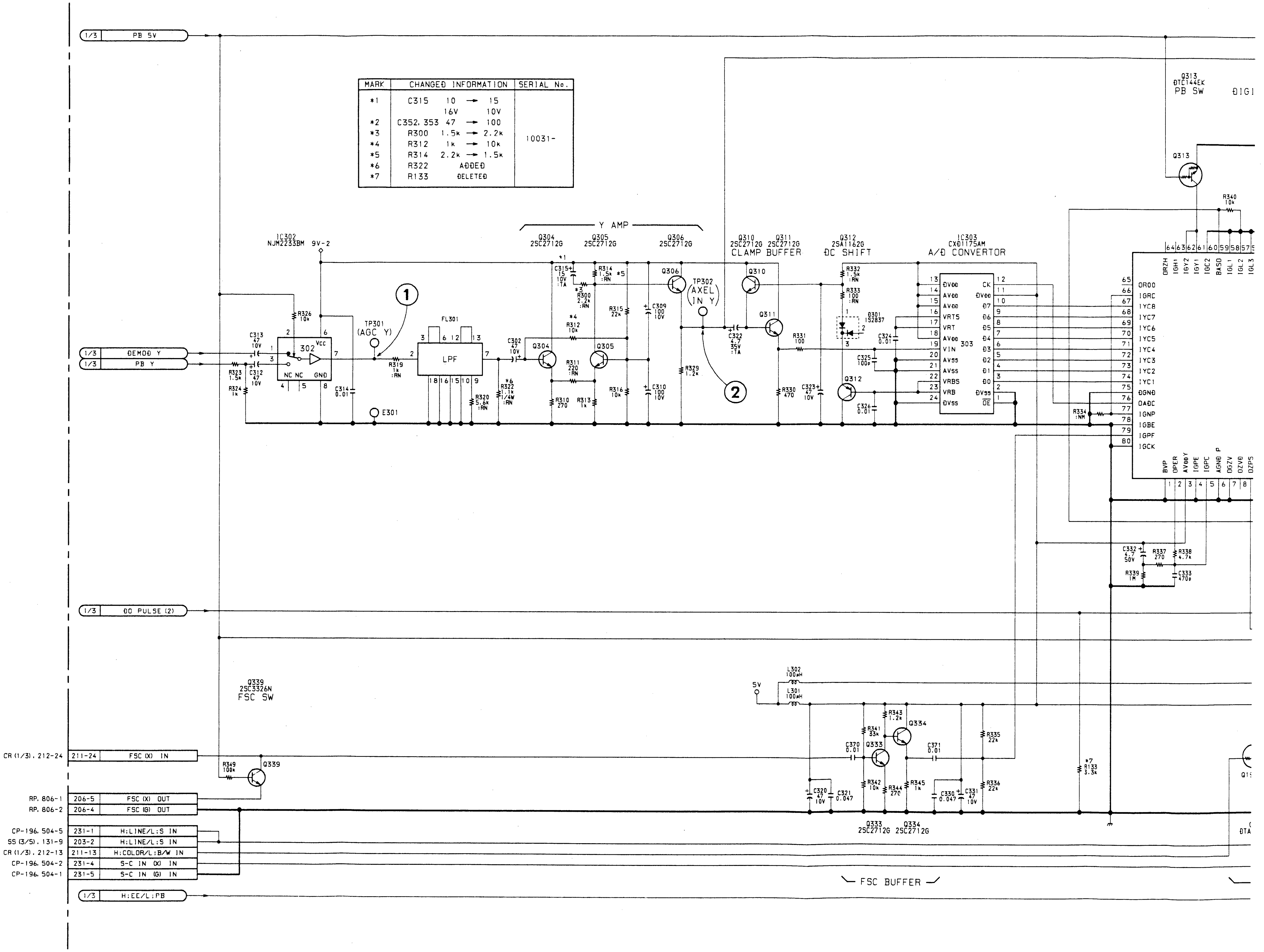
④ TP304 (D-2∗) PB mode



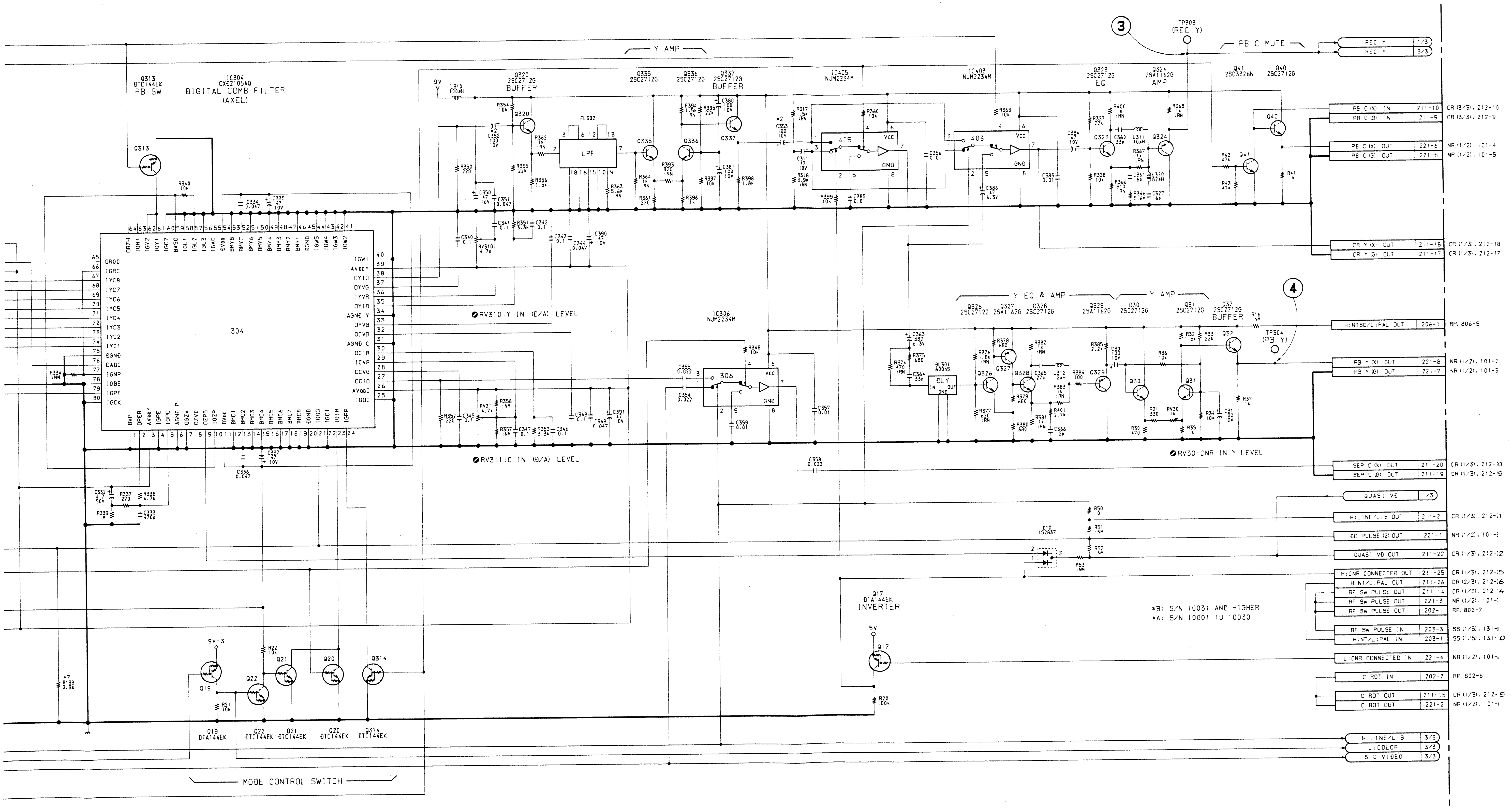
Measurement Condition

S-VIDEO IN: color bars (EBU)
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS

∗ mark; B SIDE mount


1/3 PB 5V
1/3 DEMOD Y
1/3 PB Y
1/3 DD PULSE (2)
1/3 H:EE/L:PB
IC302 NJM2233BM 9V-2
TP301 (AGC Y)
①
②
FL301 LPF
E301
Y AMP
Q304 2SC2712G
Q305 2SC2712G
Q306 2SC2712G
TP302 (AXEL IN Y)
Q310 2SC2712G Q311 2SC2712G CLAMP BUFFER
Q312 2SA1162G DC SHIFT
D301 1SS2837
IC303 CXD1175AM A/D CONVERTOR
Q313 DTC144EK PB SW
DIGI
Q339 2SC3326N FSC SW
CR(1/3). 212-24 211-24 FSC (X) IN
RP. 806-1 206-5 FSC (X) OUT
RP. 806-2 206-4 FSC (G) OUT
CP-196. 504-5 231-1 H:LINE/L:S IN
SS(3/5). 131-9 203-2 H:LINE/L:S IN
CR(1/3). 212-13 211-13 H:COLOR/L:B/W IN
CP-196. 504-2 231-4 S-C IN (X) IN
CP-196. 504-1 231-5 S-C IN (G) IN
Q333 2SC2712G Q334 2SC2712G
FSC BUFFER
5V
L302 100μH
L301 100μH

MARK	CHANGED INFORMATION	SERIAL No.
∗1	C315 10 → 15 16V 10V	10031-
∗2	C352, 353 47 → 100	
∗3	R300 1.5k → 2.2k	
∗4	R312 1k → 10k	
∗5	R314 2.2k → 1.5k	
∗6	R322 ADDED	
∗7	R133 DELETED	



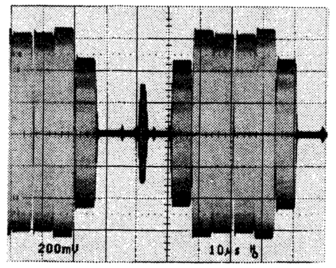
Q313 DTC144EK PB SW
IC304 CXD2105AQ DIGITAL COMB FILTER (AXEL)
304
Y AMP
Q320 2SC2712G BUFFER
FL302
LPF
Q335 2SC2712G
Q336 2SC2712G
Q337 2SC2712G BUFFER
IC405 NJM2234M
405
IC403 NJM2234M
403
Q323 2SC2712G EQ
Q324 2SA1162G AMP
Q41 2SC3326N
Q40 2SC2712G
TP303 (REC Y)
PB C MUTE
REC Y 1/3
REC Y 3/3
PB C (X) IN 211-10 CR (3/3), 212-10
PB C (G) IN 211-9 CR (3/3), 212-9
PB C (X) OUT 221-6 NR (1/2), 101-4
PB C (G) OUT 221-5 NR (1/2), 101-5
CR Y (X) OUT 211-18 CR (1/3), 212-18
CR Y (G) OUT 211-17 CR (1/3), 212-17
RV310:Y IN (D/A) LEVEL
RV311:C IN (D/A) LEVEL
IC306 NJM2234M
306
Y EQ & AMP
Y AMP
Q326 2SC2712G
Q327 2SA1162G
Q328 2SC2712G
Q329 2SA1162G
Q30 2SC2712G
Q31 2SC2712G
Q32 2SC2712G BUFFER
DL301 600nS
DLY
TP304 (PB Y)
H:NTSC/L:PAL OUT 206-1 RP, 806-5
PB Y (X) OUT 221-6 NR (1/2), 101-2
PB Y (G) OUT 221-7 NR (1/2), 101-3
RV30:CNR IN Y LEVEL
SEP C (X) OUT 211-20 CR (1/3), 212-20
SEP C (G) OUT 211-19 CR (1/3), 212-19
QUASI VD 1/3
H:LINE/L:S OUT 211-21 CR (1/3), 212-21
DD PULSE (2) OUT 221-1 NR (1/2), 101-1
QUASI VD OUT 211-22 CR (1/3), 212-12
H:CNR CONNECTED OUT 211-25 CR (1/3), 212-15
H:NT/L:PAL OUT 211-26 CR (2/3), 212-16
RF SW PULSE OUT 211-14 CR (1/3), 212-14
RF SW PULSE OUT 221-3 NR (1/2), 101-1
RF SW PULSE OUT 202-1 RP, 802-7
RF SW PULSE IN 203-3 SS (1/5), 131-1
H:NT/L:PAL IN 203-1 SS (1/5), 131-10
L:CNR CONNECTED IN 221-4 NR (1/2), 101-1
C ROT IN 202-2 RP, 802-6
C ROT OUT 211-15 CR (1/3), 212-5
C ROT OUT 221-2 NR (1/2), 101-1
H:LINE/L:S 3/3
L:COLOR 3/3
S-C VIDEO 3/3
D10 1S2837
Q17 DTA144EK INVERTER
5V
9V-3
Q19 DTA144EK
Q22 DTC144EK
Q21 DTC144EK
Q20 DTC144EK
Q314 DTC144EK
MODE CONTROL SWITCH
*B: S/N 10031 AND HIGHER
*A: S/N 10001 TO 10030
3
4

VO-37A (2/3)

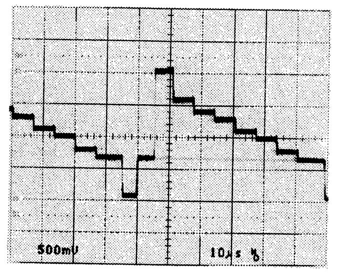
1-641-585-12 (1)
SVO-9620

VO-37A (3/3); Y/C MIX, VIDEO/S-VIDEO OUTPUT
DUS-592; N-VHS SIGNAL FILTER

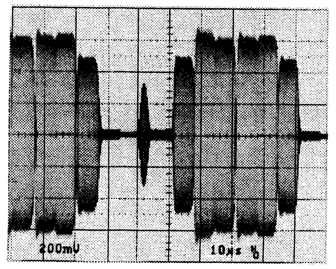
① TP491 (H-1*) STOP (E-E) mode



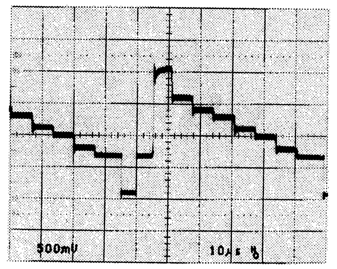
② TP492 (G-1*) STOP (E-E) mode



TP491 (H-1*) PB mode



TP492 (G-1*) PB mode



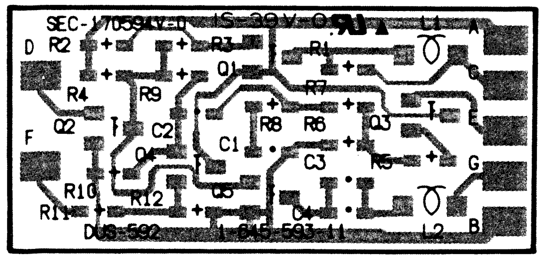
Measurement Condition

S-VIDEO IN: color bars (EBU)

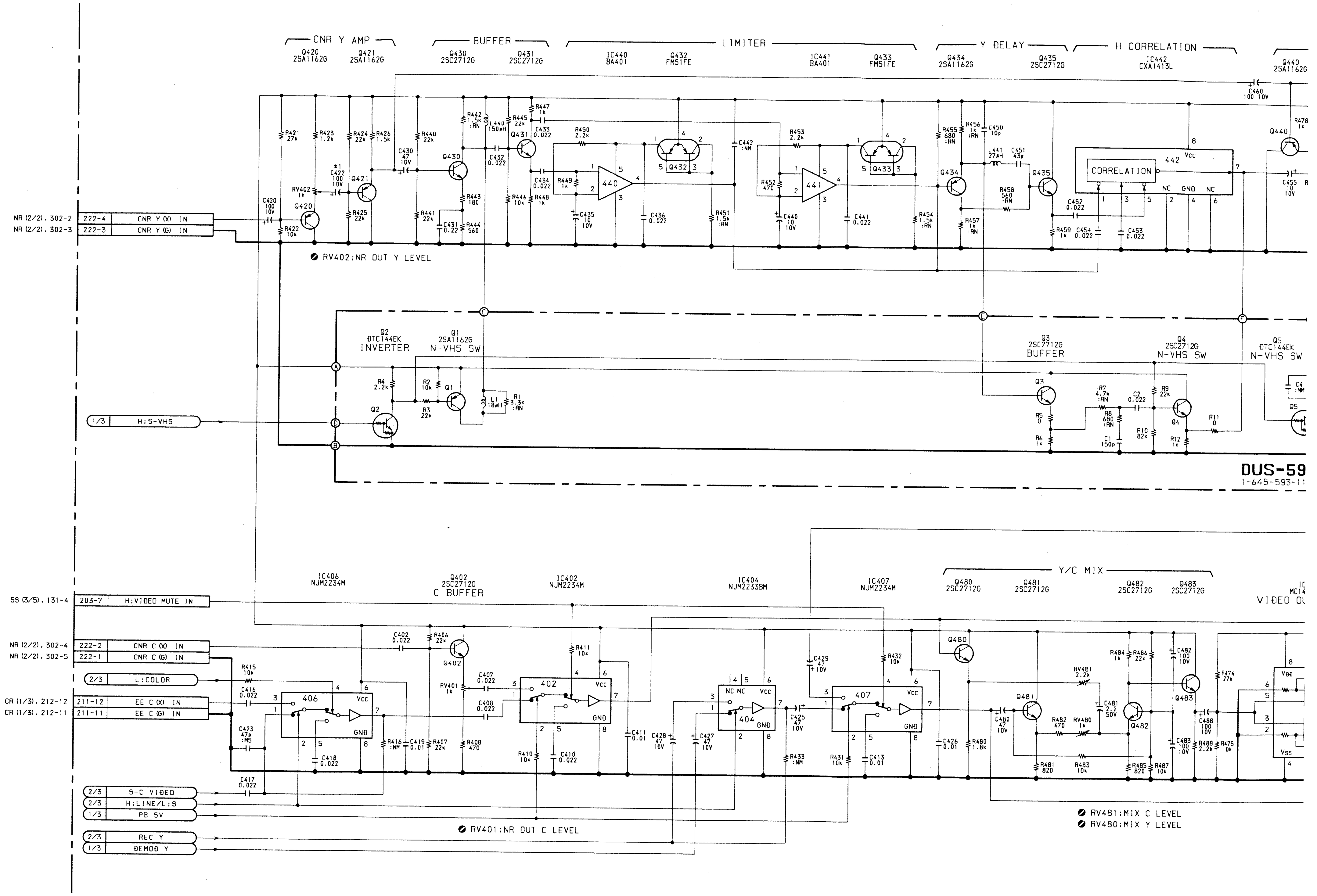
STOP (E-E) mode: S-VHS

PB mode: KRV-45HPS

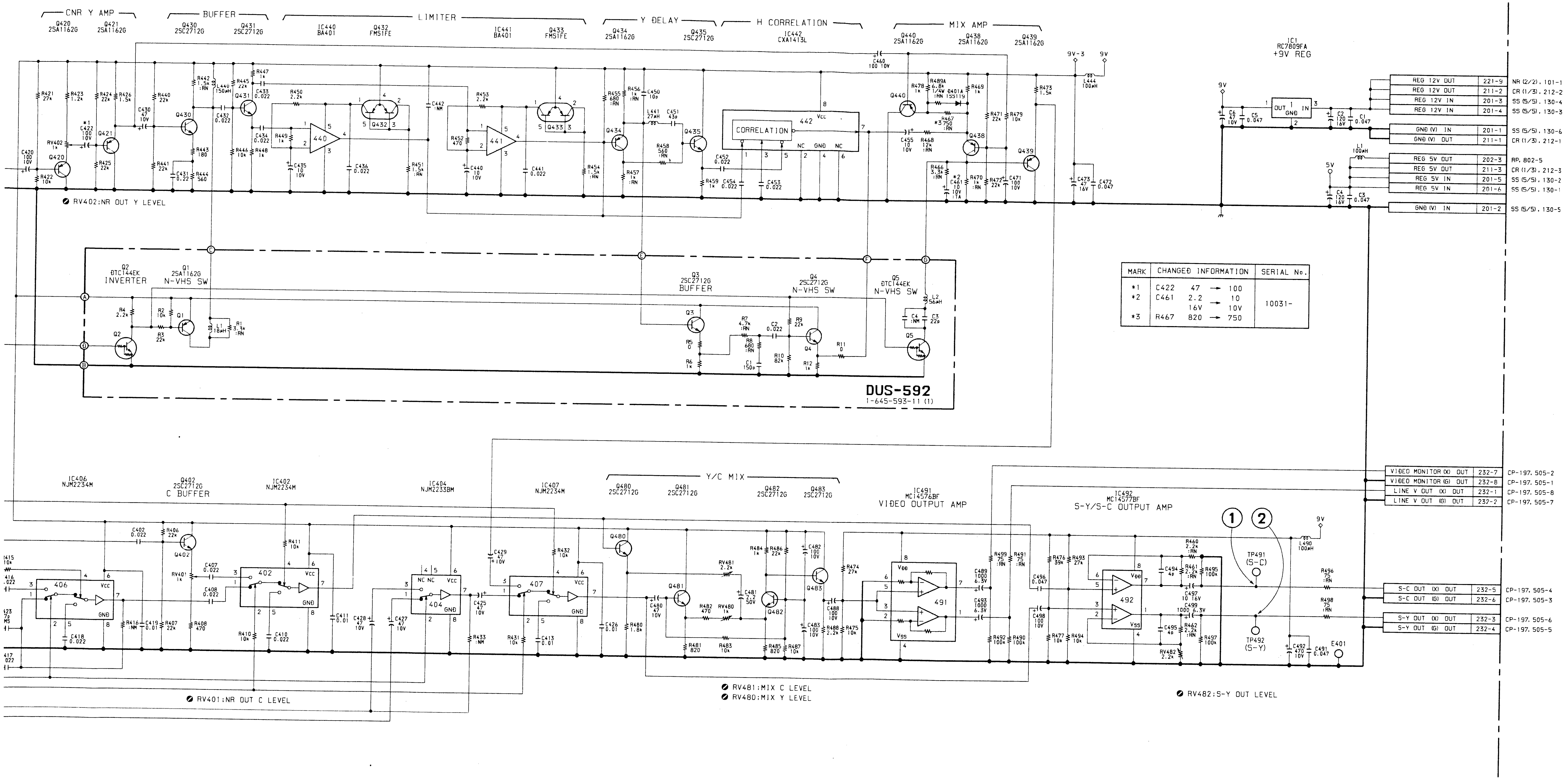
* mark; B SIDE mount


D
R2
R4
Q2
F
R10
R11
R9
C2
Q4
R3
Q1
C1
R8
R6
R1
R7
Q3
C3
C4
L1
L2
A
G
B
R12
DUS-592
1-645-593-11

DUS-592 — A SIDE —
1-645-593-11 (1)
SVO-9620


CNR Y AMP
Q420 2SA1162G
Q421 2SA1162G
BUFFER
Q430 2SC2712G
Q431 2SC2712G
LIMITER
IC440 BA401
Q432 FMS1FE
IC441 BA401
Q433 FMS1FE
Y DELAY
Q434 2SA1162G
Q435 2SC2712G
H CORRELATION
IC442 CXA1413L
CORRELATION
Q440 2SA1162G
NR (2/2), 302-2
NR (2/2), 302-3
222-4 CNR Y (X) IN
222-3 CNR Y (G) IN
RV402:NR OUT Y LEVEL
Q2 DTC144EK INVERTER
Q1 2SA1162G N-VHS SW
Q3 2SC2712G BUFFER
Q4 2SC2712G N-VHS SW
Q5 DTC144EK N-VHS SW
1/3 H:S-VHS
DUS-59
1-645-593-11
IC406 NJM2234M
Q402 2SC2712G C BUFFER
IC402 NJM2234M
IC404 NJM2233BM
IC407 NJM2234M
Y/C MIX
Q480 2SC2712G
Q481 2SC2712G
Q482 2SC2712G
Q483 2SC2712G
VIDEO OU
SS (3/5), 131-4
203-7 H:VIDEO MUTE IN
NR (2/2), 302-4
NR (2/2), 302-5
222-2 CNR C (X) IN
222-1 CNR C (G) IN
2/3 L:COLOR
CR (1/3), 212-12
CR (1/3), 212-11
211-12 EE C (X) IN
211-11 EE C (G) IN
2/3 S-C VIDEO
2/3 H:LINE/L:S
1/3 PB 5V
2/3 REC Y
1/3 DEMOD Y
RV401:NR OUT C LEVEL
RV481:MIX C LEVEL
RV480:MIX Y LEVEL

VO-37A (3/3), DUS-592


CNR Y AMP
BUFFER
LIMITER
Y DELAY
H CORRELATION
MIX AMP
Q420 2SA1162G
Q421 2SA1162G
Q430 2SC2712G
Q431 2SC2712G
IC440 BA401
Q432 FMS1FE
IC441 BA401
Q433 FMS1FE
Q434 2SA1162G
Q435 2SC2712G
IC442 CXA1413L
CORRELATION
Q440 2SA1162G
Q438 2SA1162G
Q439 2SA1162G
IC1 RC7809FA +9V REG
RV402:NR OUT Y LEVEL
Q2 DTC144EK INVERTER
Q1 2SA1162G N-VHS SW
Q3 2SC2712G BUFFER
Q4 2SC2712G N-VHS SW
Q5 DTC144EK N-VHS SW
DUS-592
1-645-593-11 (1)
REG 12V OUT 221-9 NR (2/2). 101-1
REG 12V OUT 211-2 CR (1/3). 212-2
REG 12V IN 201-3 SS (5/5). 130-4
REG 12V IN 201-4 SS (5/5). 130-3
GND (V) IN 201-1 SS (5/5). 130-6
GND (V) OUT 211-1 CR (1/3). 212-1
REG 5V OUT 202-3 RP. 802-5
REG 5V OUT 211-3 CR (1/3). 212-3
REG 5V IN 201-5 SS (5/5). 130-2
REG 5V IN 201-6 SS (5/5). 130-1
GND (V) IN 201-2 SS (5/5). 130-5
Y/C MIX
IC406 NJM2234M
Q402 2SC2712G C BUFFER
IC402 NJM2234M
IC404 NJM2233BM
IC407 NJM2234M
Q480 2SC2712G
Q481 2SC2712G
Q482 2SC2712G
Q483 2SC2712G
IC491 MC14576BF VIDEO OUTPUT AMP
IC492 MC14576BF S-Y/S-C OUTPUT AMP
①
②
TP491 (S-C)
TP492 (S-Y)
E401
VIDEO MONITOR (X) OUT 232-7 CP-197. 505-2
VIDEO MONITOR (G) OUT 232-8 CP-197. 505-1
LINE V OUT (X) OUT 232-1 CP-197. 505-8
LINE V OUT (G) OUT 232-2 CP-197. 505-7
S-C OUT (X) OUT 232-5 CP-197. 505-4
S-C OUT (G) OUT 232-6 CP-197. 505-3
S-Y OUT (X) OUT 232-3 CP-197. 505-6
S-Y OUT (G) OUT 232-4 CP-197. 505-5
RV401:NR OUT C LEVEL
RV481:MIX C LEVEL
RV480:MIX Y LEVEL
RV482:S-Y OUT LEVEL
E
F
G
H
I
J
K
L

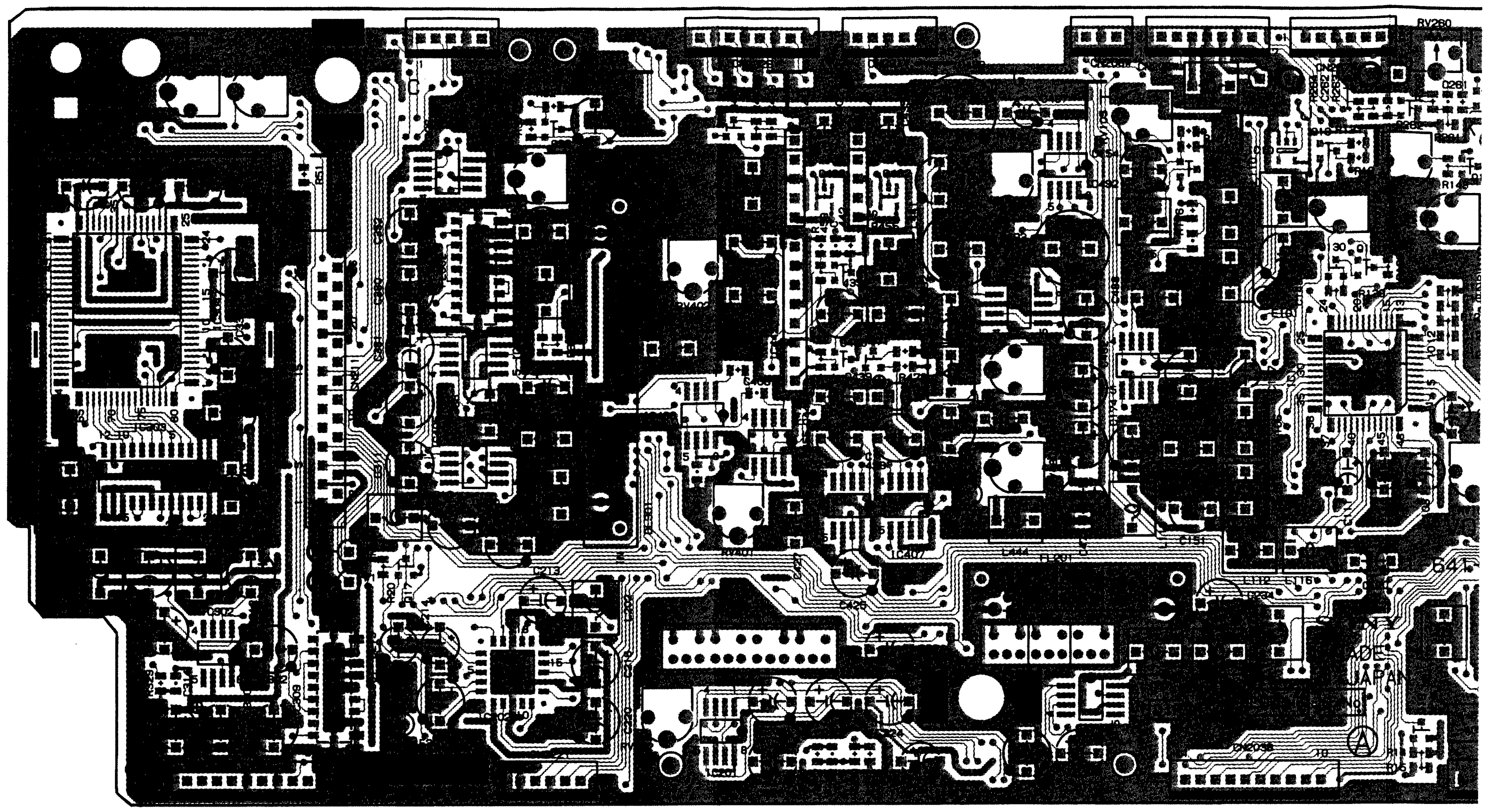
MARK	CHANGED INFORMATION	SERIAL No.
*1	C422 47 → 100	10031-
*2	C461 2.2 → 10 16V → 10V	
*3	R467 820 → 750	

VO-37A (3/3)

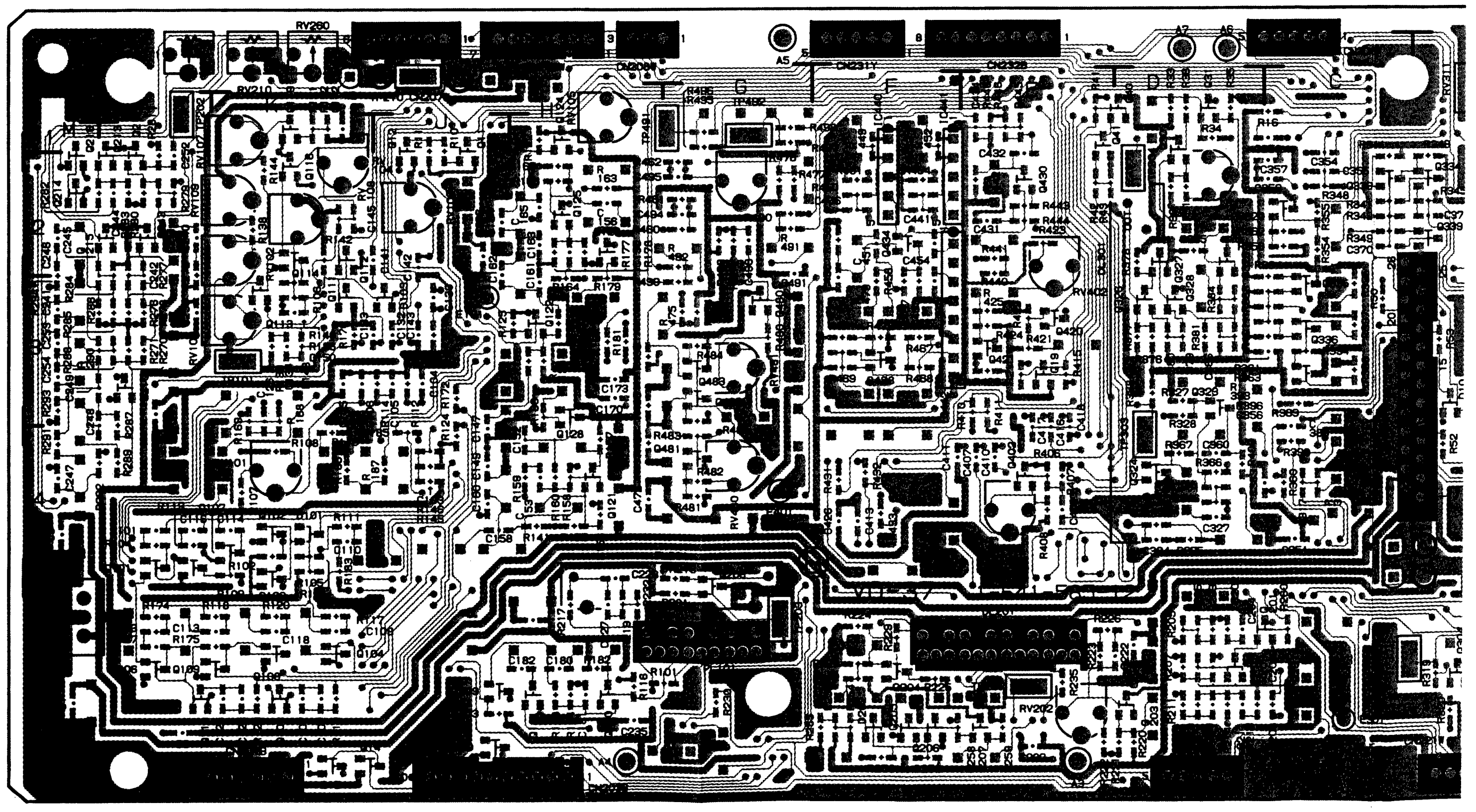
1-641-585-12 (1)
SVO-9620

13-18

VO-37A ; Y/C VIDEO PROCESS

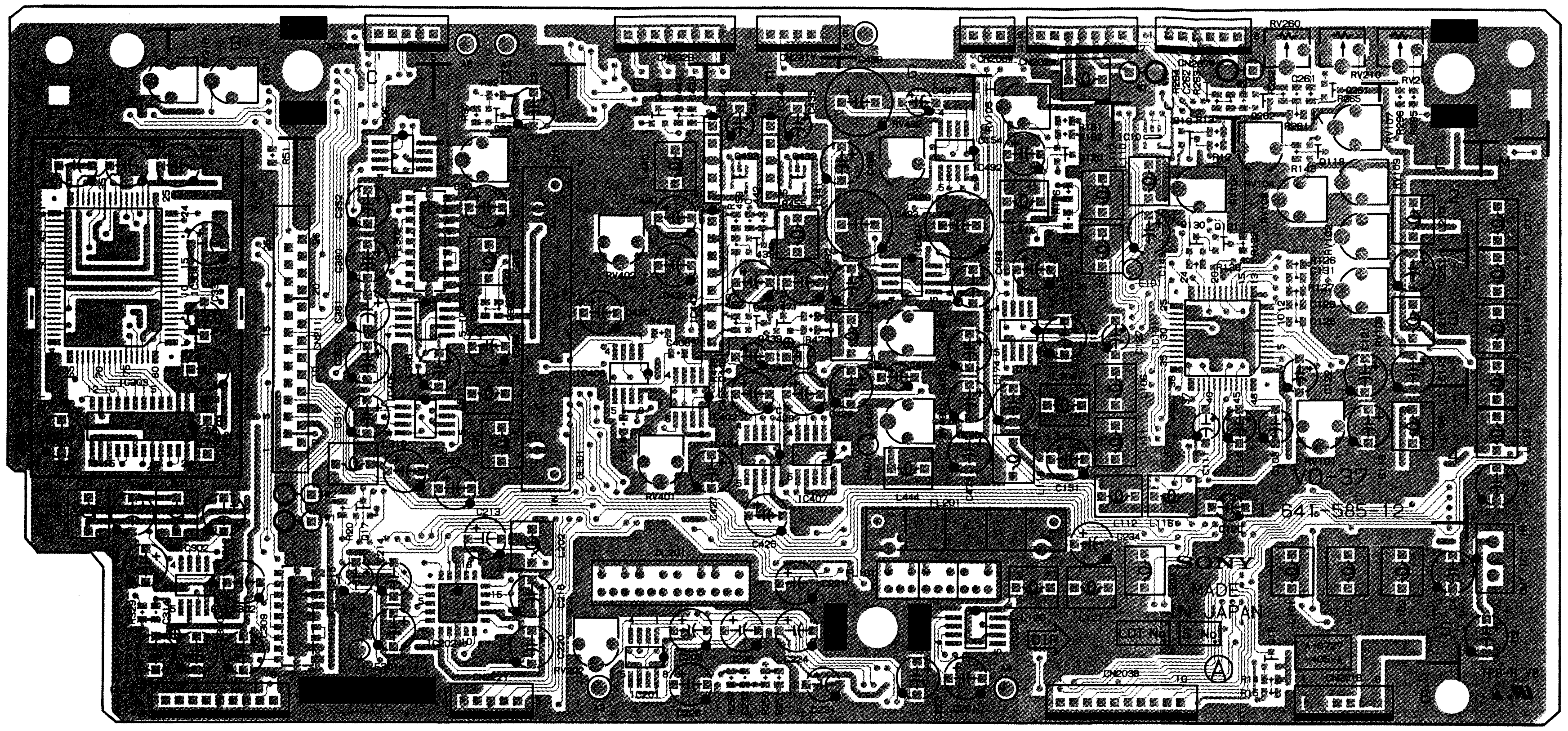


VO
1-64
SVO-

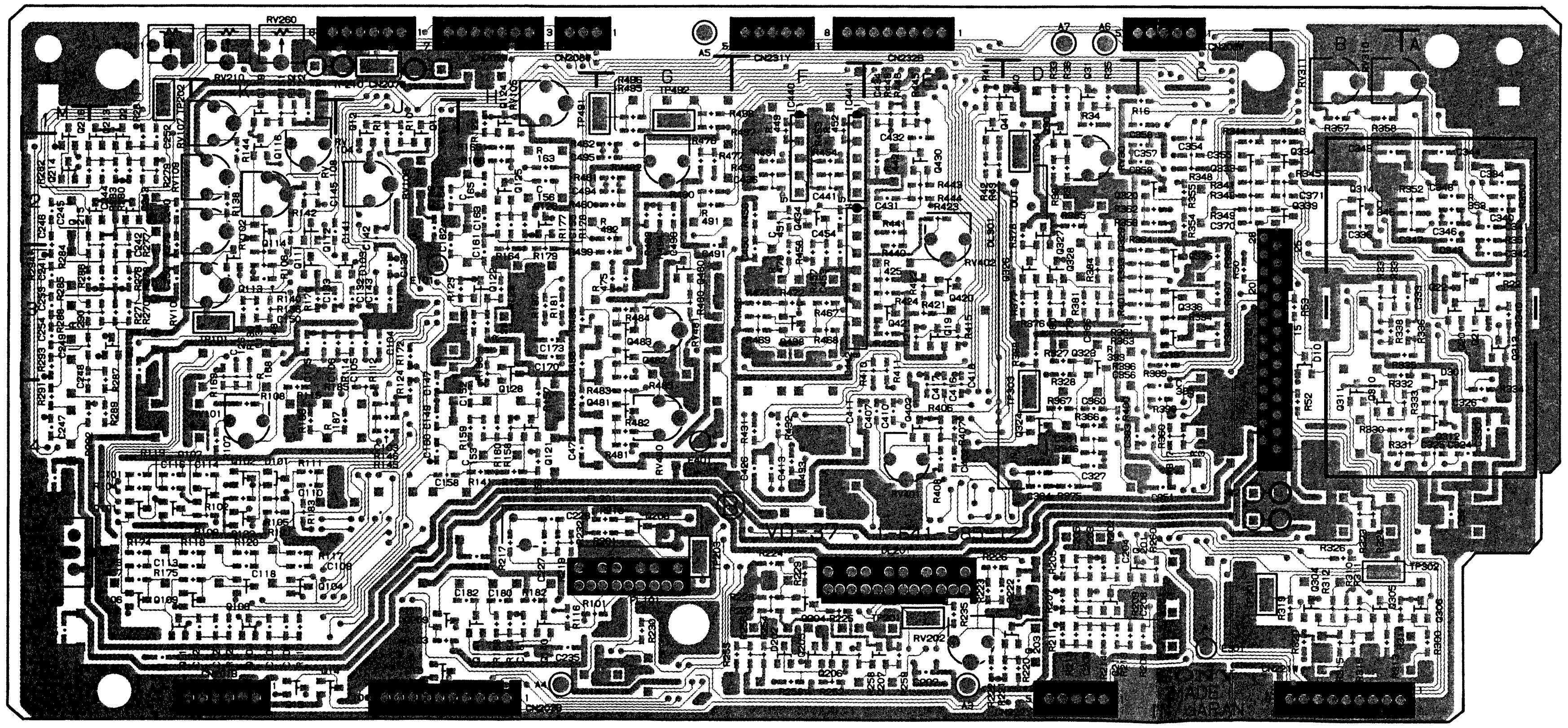


VO-37A
1-641-585-1
SVO-9620

VO-37A ; Y/C VIDEO PROCESS



VO-37A — A SIDE —
1-641-585-12 (1)
SVO-9620



VO-37A — B SIDE —
1-641-585-12 (1)
SVO-9620

VO-37A (1-641-585-12)

CN201	K-6
CN202	H-1
CN203	J-6
CN206	C-1
CN207	J-1
CN208	H-1
CN211	C-3
CN221	A-6
CN222	D-6
CN231	F-1
CN232	E-1
DL201	E-5
DL301	E-4
D10	B-3 *
D101	K-4 *
D103	J-3 *
D201	C-5 *
D202	F-5 *
D301	A-3 *
E101	J-3
E301	C-6
E401	G-4
FL101	G-5
FL201	G-4
FL301	C-5
FL302	C-2
IC1	M-5
IC10	J-1
IC101	J-3
IC102	H-3
IC201	E-6
IC202	D-5
IC203	H-5
IC302	B-5
IC303	A-4
IC304	B-3
IC306	C-1
IC402	F-4
IC403	D-3
IC404	F-4
IC405	C-4
IC406	E-3
IC407	F-4
IC440	F-1
IC441	F-1
IC442	E-3
IC491	G-2
IC492	H-2
Q10	J-6 *
Q11	J-1 *
Q12	J-1 *
Q13	J-1
Q14	K-6 *
Q15	K-6 *
Q16	K-5
Q17	C-5
Q19	E-3 *
Q20	A-3 *
Q21	A-3 *
Q22	A-3 *
Q30	D-1 *
Q31	D-1 *
Q32	D-1
Q40	D-1 *
Q41	D-1 *
Q101	L-4 *
Q102	K-4 *
Q103	K-5 *
Q104	K-5 *
Q105	L-5 *
Q106	L-5 *
Q107	K-4 *
Q108	K-5 *
Q109	L-5 *
Q110	L-5 *
Q111	K-3 *
Q112	K-2 *
Q113	K-3 *
Q114	K-2 *
Q116	K-2 *
Q118	K-2
Q119	K-1 *
Q120	H-2
Q121	H-4 *
Q122	H-3 *
Q123	K-5 *
Q124	H-1 *
Q125	H-2 *
Q126	H-2 *
Q128	H-4 *
Q130	J-2
Q131	J-2
Q140	H-5 *
Q141	H-5 *
Q201	C-5 *
Q203	D-5 *
Q204	F-5 *
Q205	F-5 *
Q206	F-6 *
Q207	E-6 *
Q208	G-4 *
Q209	J-5 *
Q210	L-3 *
Q211	L-2 *
Q212	L-1 *
Q213	L-1 *
Q214	M-2 *
Q215	M-2 *
Q216	M-1 *
Q261	K-1
Q262	K-1
Q304	B-5 *
Q305	B-5 *
Q306	A-5 *
Q310	B-4 *
Q311	B-4 *
Q312	A-4 *
Q313	A-3 *
Q314	B-2 *
Q320	D-2 *
Q323	D-3 *
Q324	D-4 *
Q326	D-3 *
Q327	D-2 *
Q328	D-3 *
Q329	D-2 *
Q333	C-2 *
Q334	B-2 *
Q335	C-3 *
Q336	C-3 *
Q337	C-3 *
Q339	B-2 *
Q402	E-4 *
Q420	E-3 *
Q421	E-3 *
Q430	E-2 *
Q431	E-1
Q432	F-2
Q433	F-2
Q434	F-2 *
Q435	F-3
Q438	F-3 *
Q439	F-3
Q440	F-3
Q480	G-3 *
Q481	G-4 *
Q482	G-3 *
Q483	G-3 *
RV30	D-2
RV101	K-4
RV102	K-2
RV103	K-3
RV104	K-2
RV105	H-1
RV106	J-2
RV107	L-1
RV108	K-2
RV109	L-2
RV202	E-5
RV210	K-1
RV211	L-1
RV260	K-1
RV310	B-1
RV311	B-1
RV401	E-4
RV402	E-3
RV480	G-4
RV481	G-3
RV482	G-1
TP101	K-3 *
TP201	E-5 *
TP202	L-1 *
TP203	G-5 *
TP210	J-1 *
TP301	C-5 *
TP302	A-5 *
TP303	D-4 *
TP304	D-2 *
TP491	H-1 *
TP492	G-1 *

* mark ; B SIDE mount

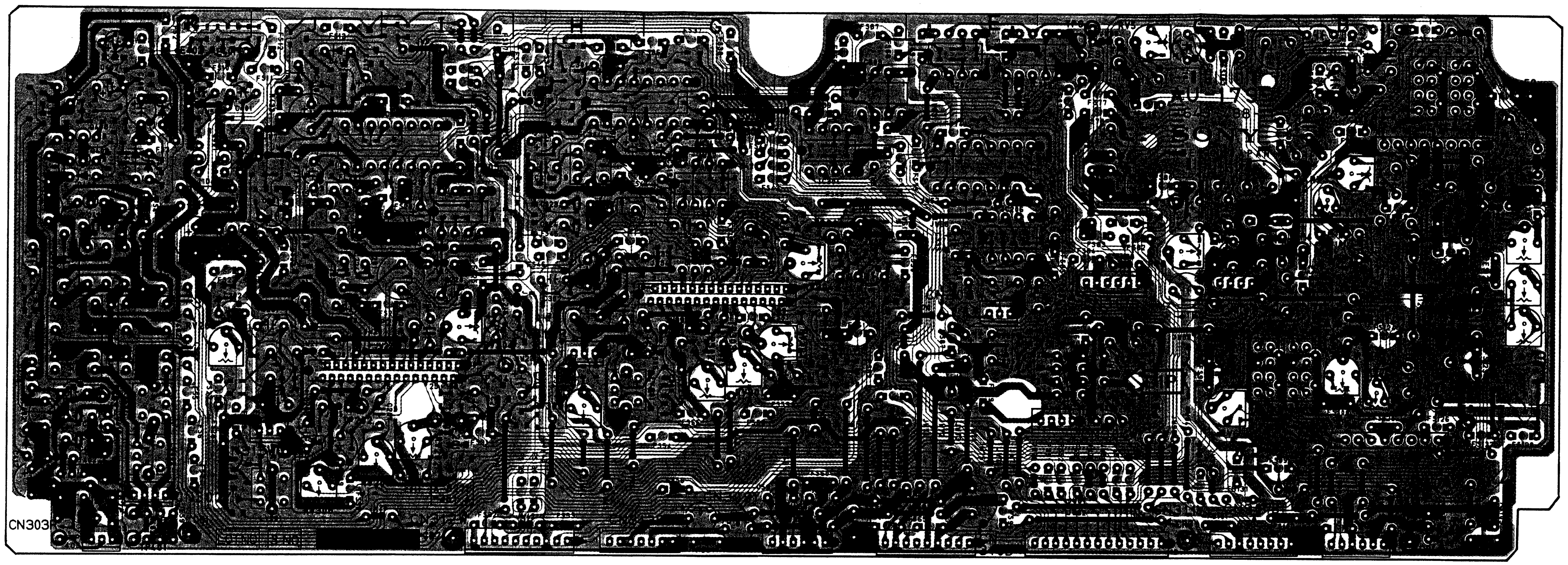
AU-179A; AFM PROCESS/NORMAL AUDIO PROCESS

Serial No. 10031 and higher

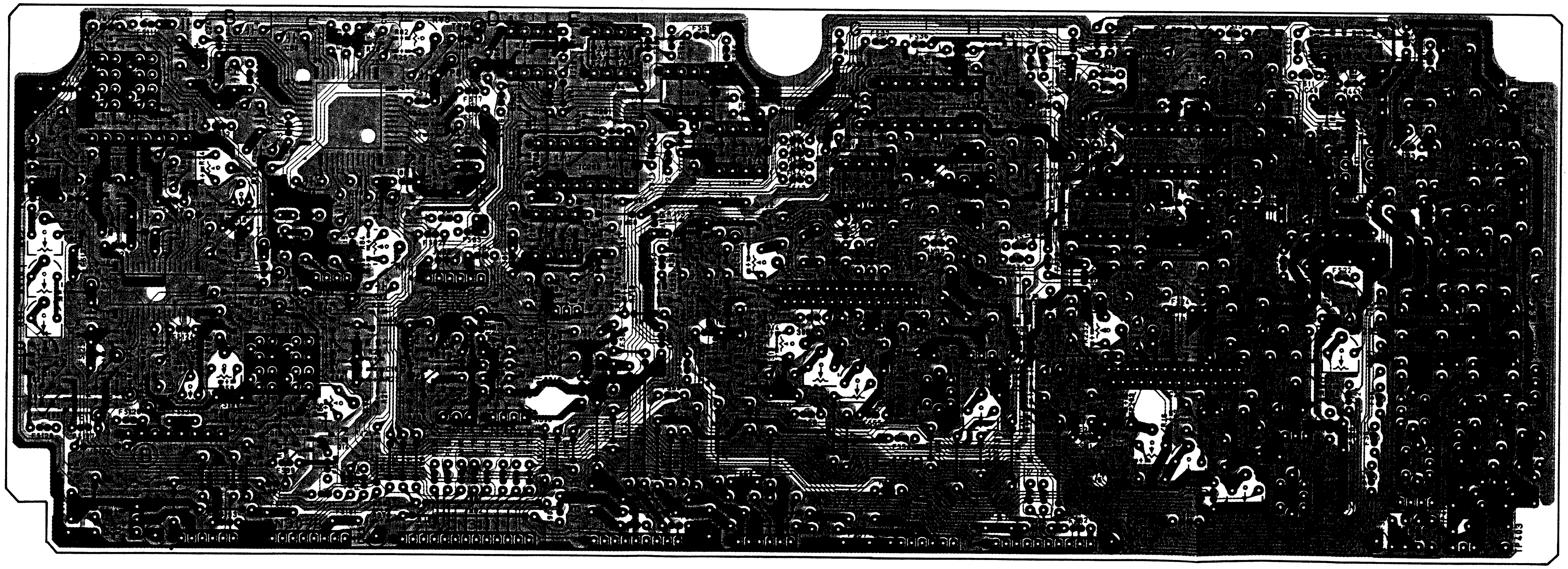
AU-179A (1-643-488-12)

CN302	K-4	IC202	I-1	Q412	L-1 *
CN303	L-4	IC203	D-1	Q413	L-1 *
CN304	D-4	IC204	E-1	Q414	L-1 *
CN305	C-3	IC205	E-1	Q416	J-1 *
CN306	E-3	IC206	E-2	Q417	K-1 *
CN307	C-4	IC207	I-2	Q418	K-1 *
CN308	B-4	IC301	G-3	Q419	K-2
CN309	G-4	IC302	G-1	Q420	K-1 *
CN310	E-4	IC303	F-1	Q421	K-1 *
CN311	C-4	IC201	J-3	Q422	J-1 *
CN312	I-4	IC304	F-2	Q423	L-3
CN313	G-4	IC307	G-2	Q424	D-3 *
CN315	J-4	IC308	D-3 *	Q425	D-4
CN316	H-3	IC401	K-2		
CN317	D-3			RV1	A-3
		LV401	K-4	RV2	A-2
CR1	K-4	LV402	K-4	RV3	B-2
CR2	I-4			RV4	B-2
CR3	C-4	Q4	C-3 *	RV5	D-1
CR4	A-4	Q5	D-2 *	RV6	C-4
		Q8	C-4 *	RV7	B-3
D2	A-4 *	Q10	A-4	RV8	B-3
D8	A-2 *	Q12	C-4 *	RV9	D-2
D201	K-3 *	Q13	C-3 *	RV201	I-4
D202	J-3 *	Q14	C-4 *	RV202	I-4
D203	I-4 *	Q20	B-2 *	RV204	I-3
D205	D-3 *	Q21	B-3 *	RV205	K-3
D206	J-3 *	Q201	J-2 *	RV206	G-3
D301	H-3 *	Q203	I-4 *	RV301	G-3
D302	H-1 *	Q204	J-2 *	RV302	F-3
D303	J-1 *	Q205	H-3 *	RV304	F-3
D306	G-3 *	Q206	I-4 *	RV305	H-4
D308	H-1 *	Q209	J-2 *	RV306	J-4
D309	F-3 *	Q217	E-3 *		
D310	D-3 *	Q218	D-3 *	RY401	L-3
D401	K-2	Q219	H-4 *	RV402	K-3
D402	K-2	Q227	I-4 *		
D403	L-2	Q230	J-3 *	T401	L-2
D404	K-2	Q231	J-4 *	T402	L-4
D405	K-2	Q301	H-1 *		
D406	K-1 *	Q303	F-3 *	TP1	A-3
D407	L-4	Q304	H-2 *	TP2	A-3
D409	J-1 *	Q305	F-2 *	TP3	A-3
D410	J-1	Q306	F-3 *	TP4	B-2
D411	J-1	Q307	G-1 *	TP5	A-2
D412	K-2	Q309	H-2 *	TP7	C-3
D413	K-2	Q312	L-1 *	TP8	D-1
D414	K-1	Q313	I-1 *	TP9	D-1
		Q314	I-1 *	TP10	B-4
E1	A-4	Q317	E-3 *	TP11	B-3
E2	A-1	Q318	E-3 *	TP12	C-3
E3	D-1	Q319	E-3 *	TP13	D-2
E201	I-4	Q320	H-2 *	TP201	J-4
E202	J-2	Q322	F-2 *	TP202	J-4
E301	F-2	Q323	G-4 *	TP203	I-4
E302	H-2	Q324	G-3 *	TP204	I-3
E401	K-1	Q326	F-3 *	TP205	I-2
E402	K-1	Q327	F-3 *	TP206	I-3
E403	L-4	Q328	D-3 *	TP301	H-3
		Q329	H-2 *	TP302	G-3
FL1	A-1	Q401	K-2	TP303	G-3
FL2	C-3	Q403	L-2	TP304	F-2
FL201	J-2	Q404	K-2 *	TP305	G-1
FL301	H-2	Q406	L-2	TP306	G-2
		Q407	L-2 *	TP401	K-4
IC1	B-2 *	Q408	L-1	TP402	K-4
IC2	C-2 *	Q409	K-1 *	TP403	L-4
IC5	A-2 *	Q410	K-4		
IC201	J-3	Q411	L-3 *		

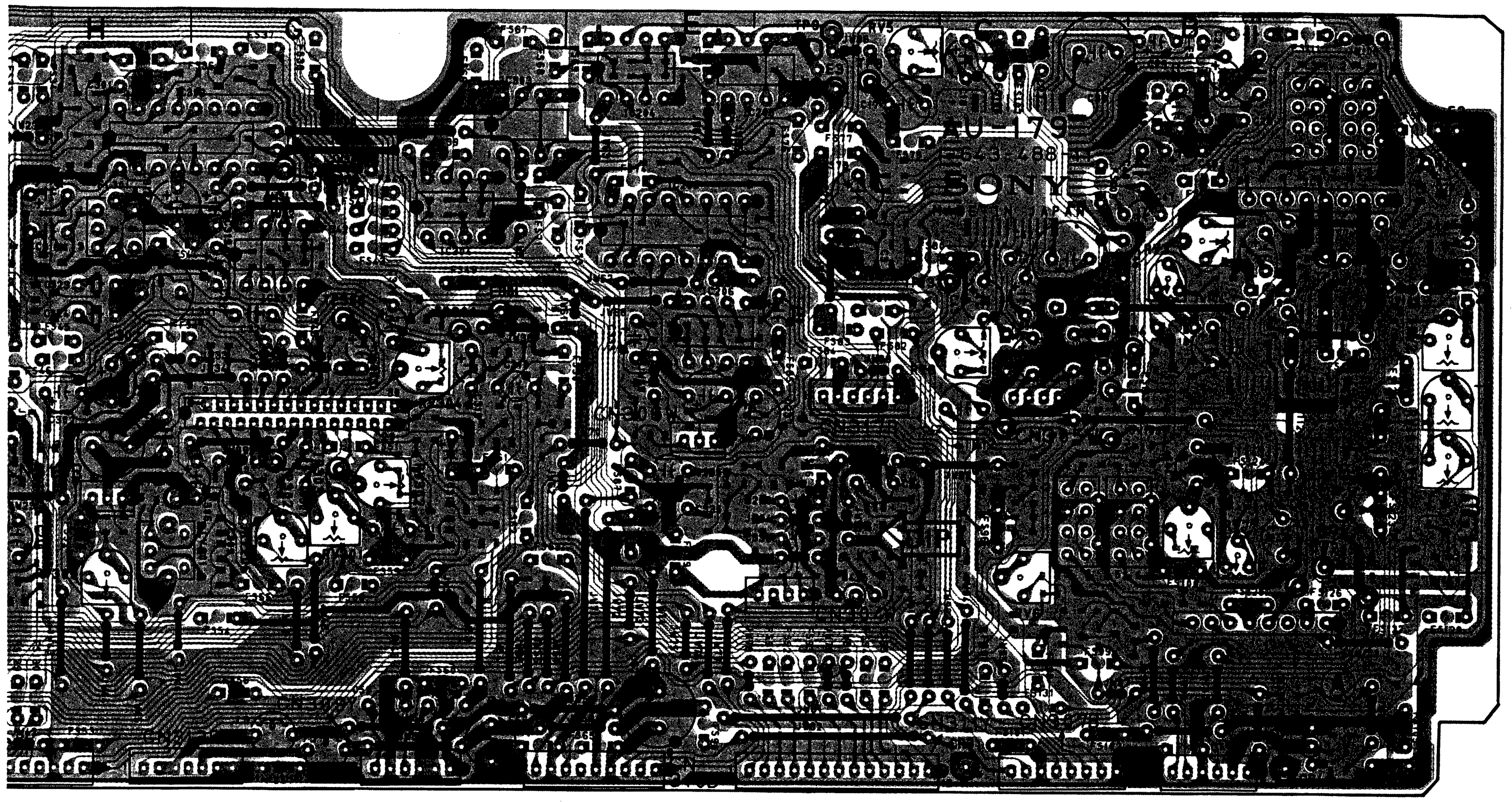
* mark; B SIDE mount



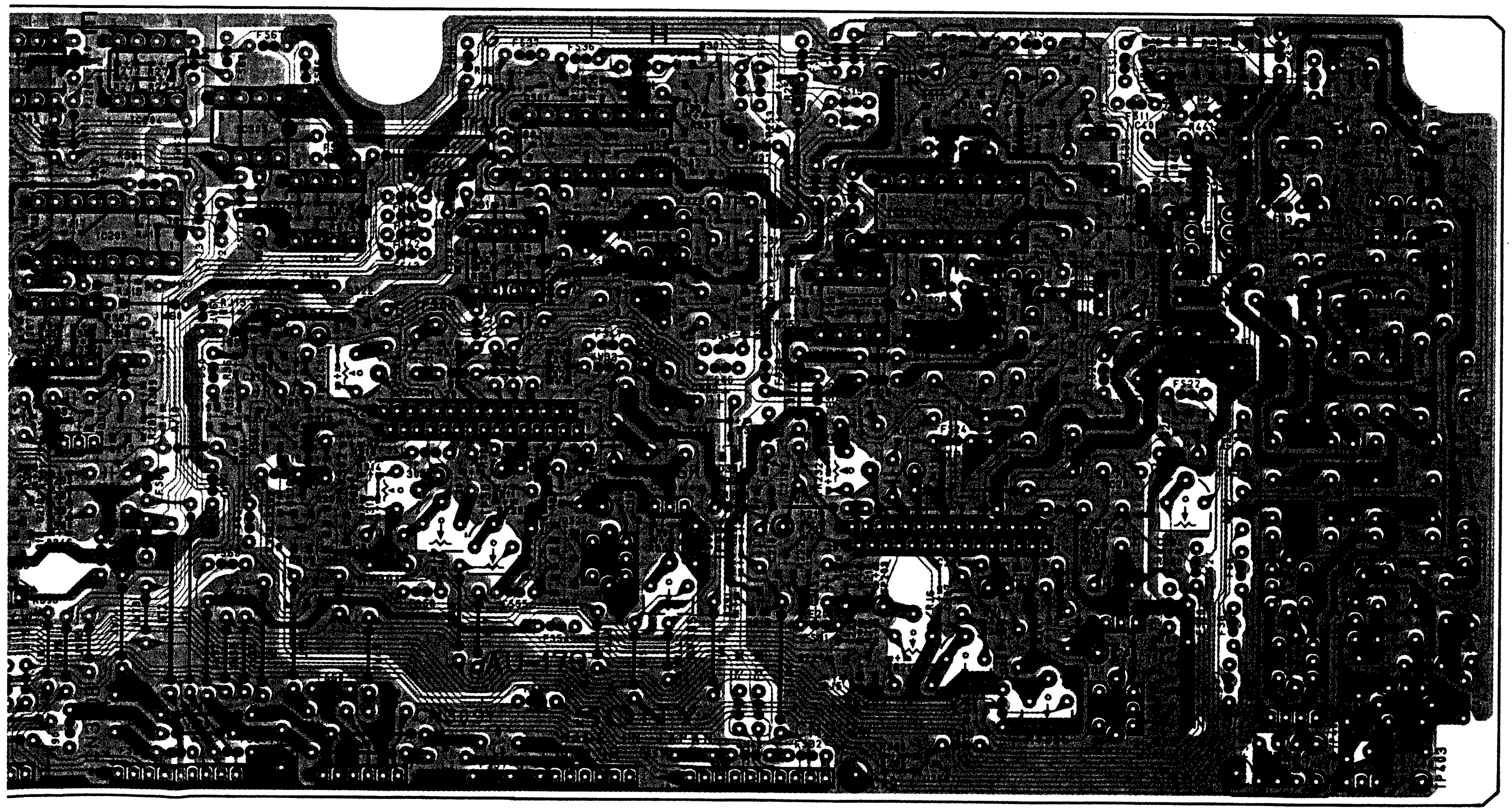
AU-179A — A SIDE —
1-643-488-12 (1)
SVO-9620



AU-179A — B SIDE —
1-643-488-12 (1)
SVO-9620



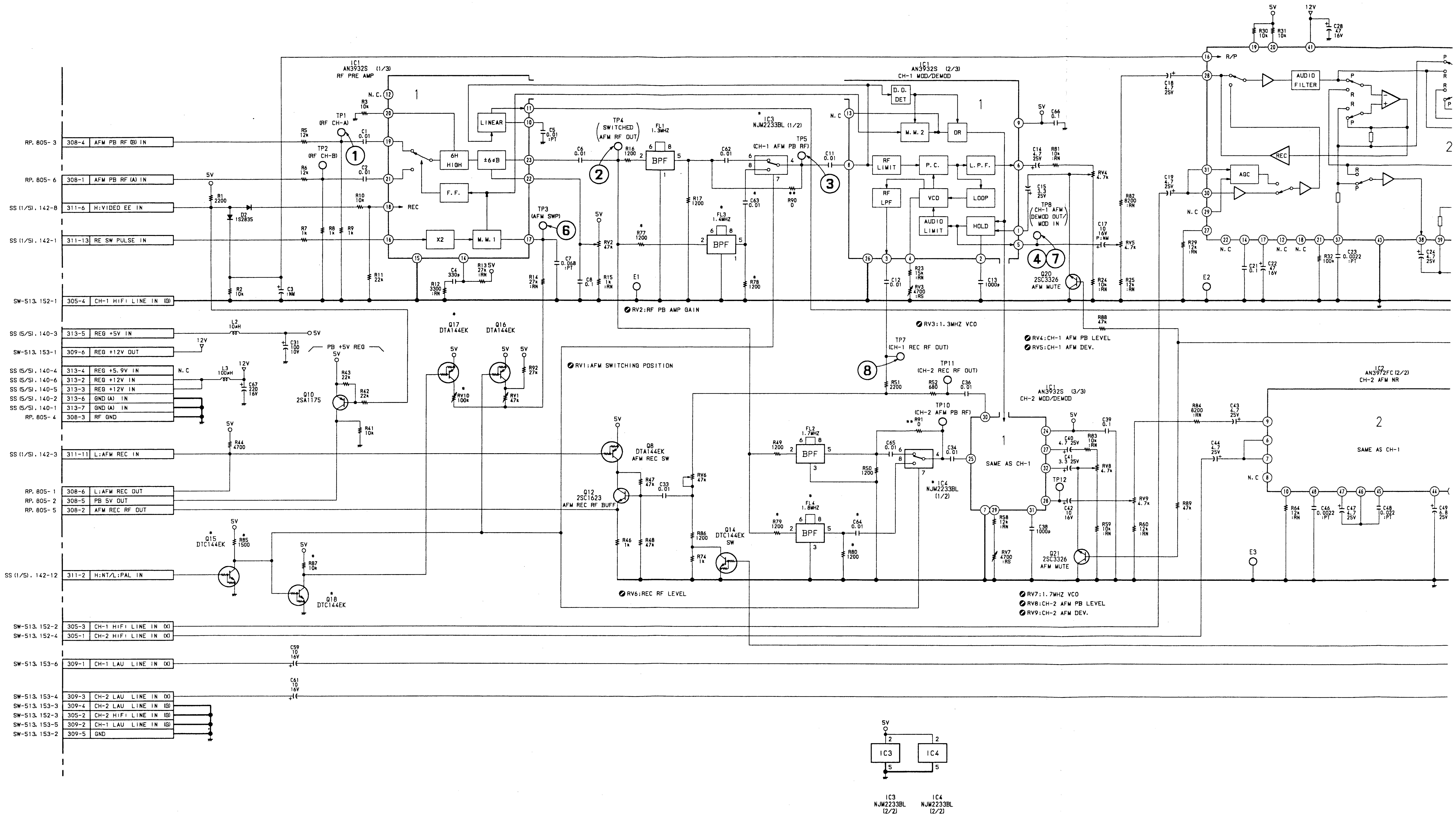
AU-179A – A SIDE –
1-643-488-12 (1)
SVO-9620



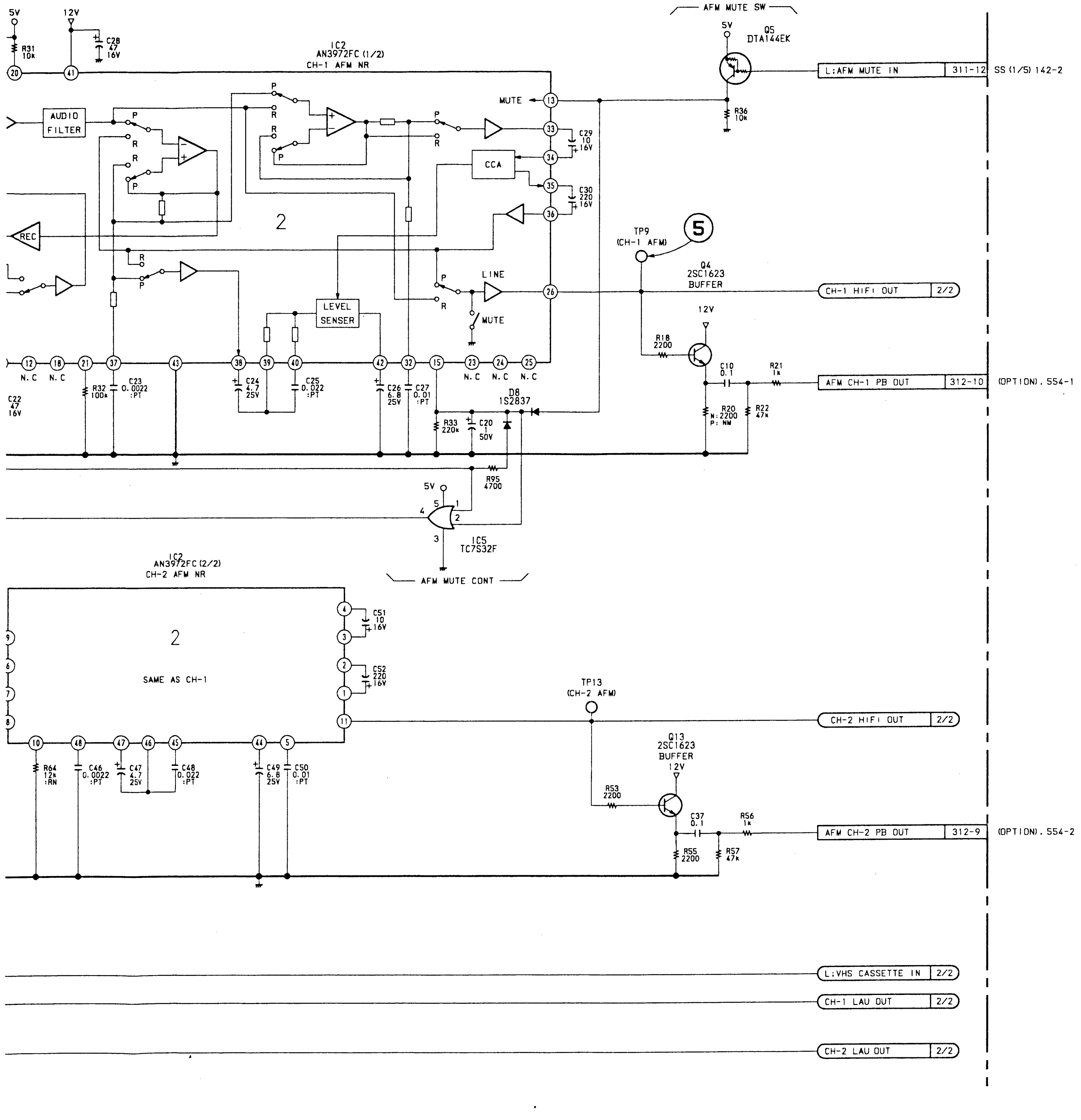
AU-179A – B SIDE –
1-643-488-12 (1)
SVO-9620

AU-179A (1/2); AFM PROCESS

Serial No. 10031 and higher

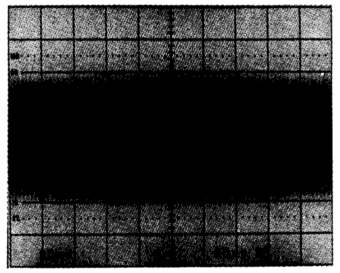

RP, 805- 3 | 308-4 | AFM PB RF (B) IN
RP, 805- 6 | 308-1 | AFM PB RF (A) IN
SS (1/5), 142-8 | 311-6 | H:VIDEO EE IN
SS (1/5), 142-1 | 311-13 | RE SW PULSE IN
SW-513, 152-1 | 305-4 | CH-1 HIFI LINE IN (G)
SS (5/5), 140-3 | 313-5 | REG +5V IN
SW-513, 153-1 | 309-6 | REG +12V OUT
SS (5/5), 140-4 | 313-4 | REG +5.9V IN
SS (5/5), 140-6 | 313-2 | REG +12V IN
SS (5/5), 140-5 | 313-3 | REG +12V IN
SS (5/5), 140-2 | 313-6 | GND (A) IN
SS (5/5), 140-1 | 313-7 | GND (A) IN
RP, 805- 4 | 308-3 | RF GND
SS (1/5), 142-3 | 311-11 | L:AFM REC IN
RP, 805- 1 | 308-6 | L:AFM REC OUT
RP, 805- 2 | 308-5 | PB 5V OUT
RP, 805- 5 | 308-2 | AFM REC RF OUT
SS (1/5), 142-12 | 311-2 | H:NT/L:PAL IN
SW-513, 152-2 | 305-3 | CH-1 HIFI LINE IN (X)
SW-513, 152-4 | 305-1 | CH-2 HIFI LINE IN (X)
SW-513, 153-6 | 309-1 | CH-1 LAU LINE IN (X)
SW-513, 153-4 | 309-3 | CH-2 LAU LINE IN (X)
SW-513, 153-3 | 309-4 | CH-2 LAU LINE IN (G)
SW-513, 152-3 | 305-2 | CH-2 HIFI LINE IN (G)
SW-513, 153-5 | 309-2 | CH-1 LAU LINE IN (G)
SW-513, 153-2 | 309-5 | GND
IC1 AN3932S (1/3) RF PRE AMP
TP1 (RF CH-A)
TP2 (RF CH-B)
LINEAR
6H HIGH
±6dB
F.F.
X2
M.M. 1
TP3 (AFM SWP)
TP4 (SWITCHED AFM RF OUT)
FL1 1.3MHZ
BPF
FL3 1.4MHZ
IC3 NJM2233BL (1/2)
TP5 (CH-1 AFM PB RF)
IC1 AN3932S (2/3) CH-1 MOD/DEMOD
D.O. DET
M.M. 2
OR
RF LIMIT
P.C.
L.P.F.
RF LPF
VCO
LOOP
AUDIO LIMIT
HOLD
TP8 (CH-1 AFM DEMOD OUT/ MOD IN)
Q20 2SC3326 AFM MUTE
AUDIO FILTER
REC
AGC
R/P
RV2:RF PB AMP GAIN
RV3:1.3MHZ VCO
RV4:CH-1 AFM PB LEVEL
RV5:CH-1 AFM DEV.
PB +5V REG
Q10 2SA1175
Q17 DTA144EK
Q16 DTA144EK
RV1:AFM SWITCHING POSITION
TP7 (CH-1 REC RF OUT)
TP11 (CH-2 REC RF OUT)
Q8 DTA144EK AFM REC SW
Q12 2SC1623 AFM REC RF BUFF
Q15 DTC144EK
Q18 DTC144EK
Q14 DTC144EK SW
RV6:REC RF LEVEL
FL2 1.7MHZ
FL4 1.8MHZ
TP10 (CH-2 AFM PB RF)
IC4 NJM2233BL (1/2)
IC1 AN3932S (3/3) CH-2 MOD/DEMOD
SAME AS CH-1
TP12
Q21 2SC3326 AFM MUTE
RV7:1.7MHZ VCO
RV8:CH-2 AFM PB LEVEL
RV9:CH-2 AFM DEV.
IC2 AN3972FC (2/2) CH-2 AFM NR
SAME AS CH-1
E1
E2
E3
IC3 NJM2233BL (2/2)
IC4 NJM2233BL (2/2)
1
2
3
4
6
7
8

A | B | C | D | E | F | G | H |

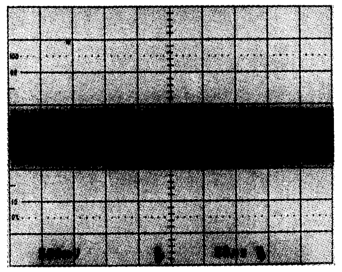

5V
12V
R31 10k
C28 47 16V
IC2 AN3972FC (1/2) CH-1 AFM NR
AFM MUTE SW
5V
Q5 DTA144EK
L:AFM MUTE IN
311-12
SS (1/5) 142-2
R36 10k
MUTE
AUDIO FILTER
C29 10 16V
CCA
C30 220 16V
REC
2
TP9 (CH-1 AFM)
5
Q4 2SC1623 BUFFER
LINE
MUTE
CH-1 HIFI OUT
2/2
LEVEL SENSER
12V
R18 2200
C10 0.1
R21 1k
AFM CH-1 PB OUT
312-10
(OPTION). 554-1
N.C N.C
C22 47 16V
R32 100k
C23 0.0022 :PT
C24 4.7 25V
C25 0.022 :PT
C26 6.8 25V
C27 0.01 :PT
N.C N.C N.C
D8 1S2837
R33 220k
C20 1 50V
R20 *:2200 P:NM
R22 47k
5V
R95 4700
IC5 TC7S32F
AFM MUTE CONT
IC2 AN3972FC (2/2) CH-2 AFM NR
C51 10 16V
2
SAME AS CH-1
C52 220 16V
TP13 (CH-2 AFM)
CH-2 HIFI OUT
2/2
Q13 2SC1623 BUFFER
12V
R53 2200
C37 0.1
R56 1k
AFM CH-2 PB OUT
312-9
(OPTION). 554-2
R64 12k :RN
C46 0.0022 :PT
C47 4.7 25V
C48 0.022 :PT
C49 6.8 25V
C50 0.01 :PT
R55 2200
R57 47k
L:VHS CASSETTE IN
2/2
CH-1 LAU OUT
2/2
CH-2 LAU OUT
2/2

NOTE:* mark is NTSC No-Mount.
** mark is PAL No-Mount.

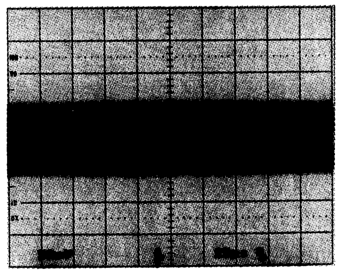
① TP1 (A-3) PB mode



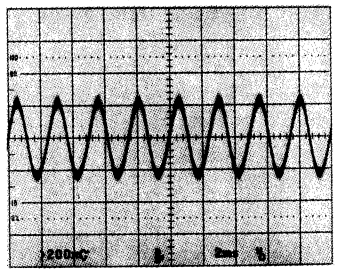
② TP4 (B-2) PB mode



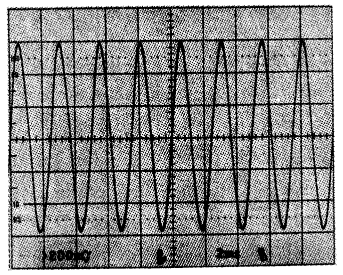
③ TP5 (A-2) PB mode



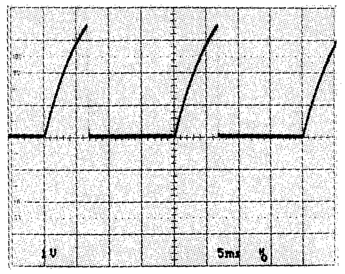
④ TP8 (D-1) PB mode



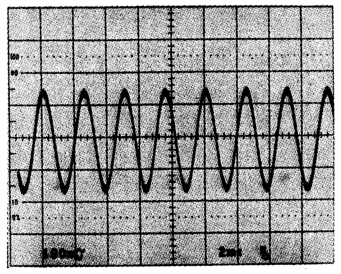
⑤ TP9 (D-1) PB mode



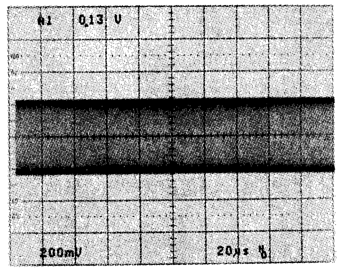
⑥ TP3 (A-3) PB mode



⑦ TP8 (D-1) STOP (E-E) mode



⑧ TP7 (C-3) STOP (E-E) mode



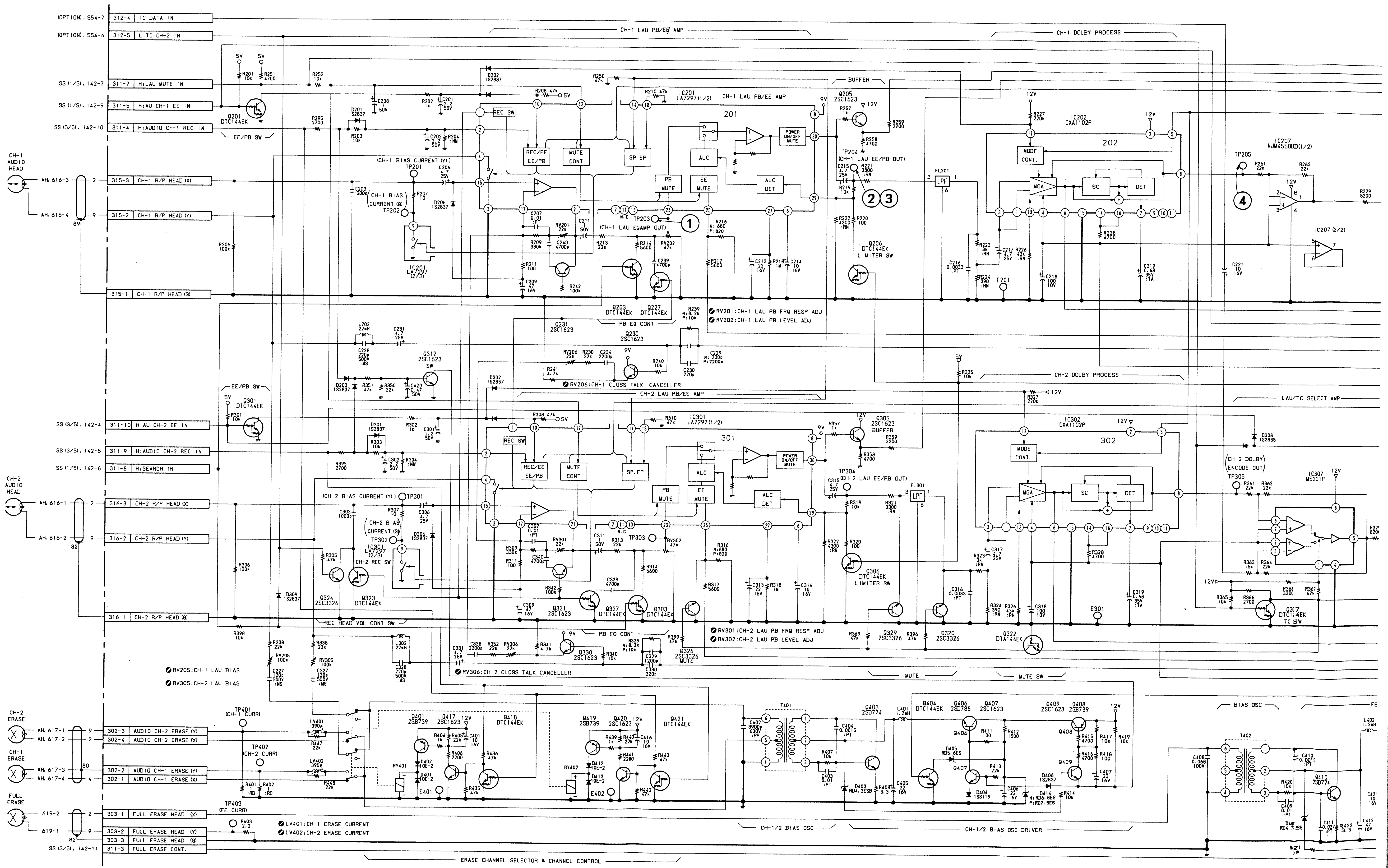
Measurement Condition
CH-1, AUDIO IN: 400Hz −6dBu
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS (Hi-Fi)

AU-179A (1/2)

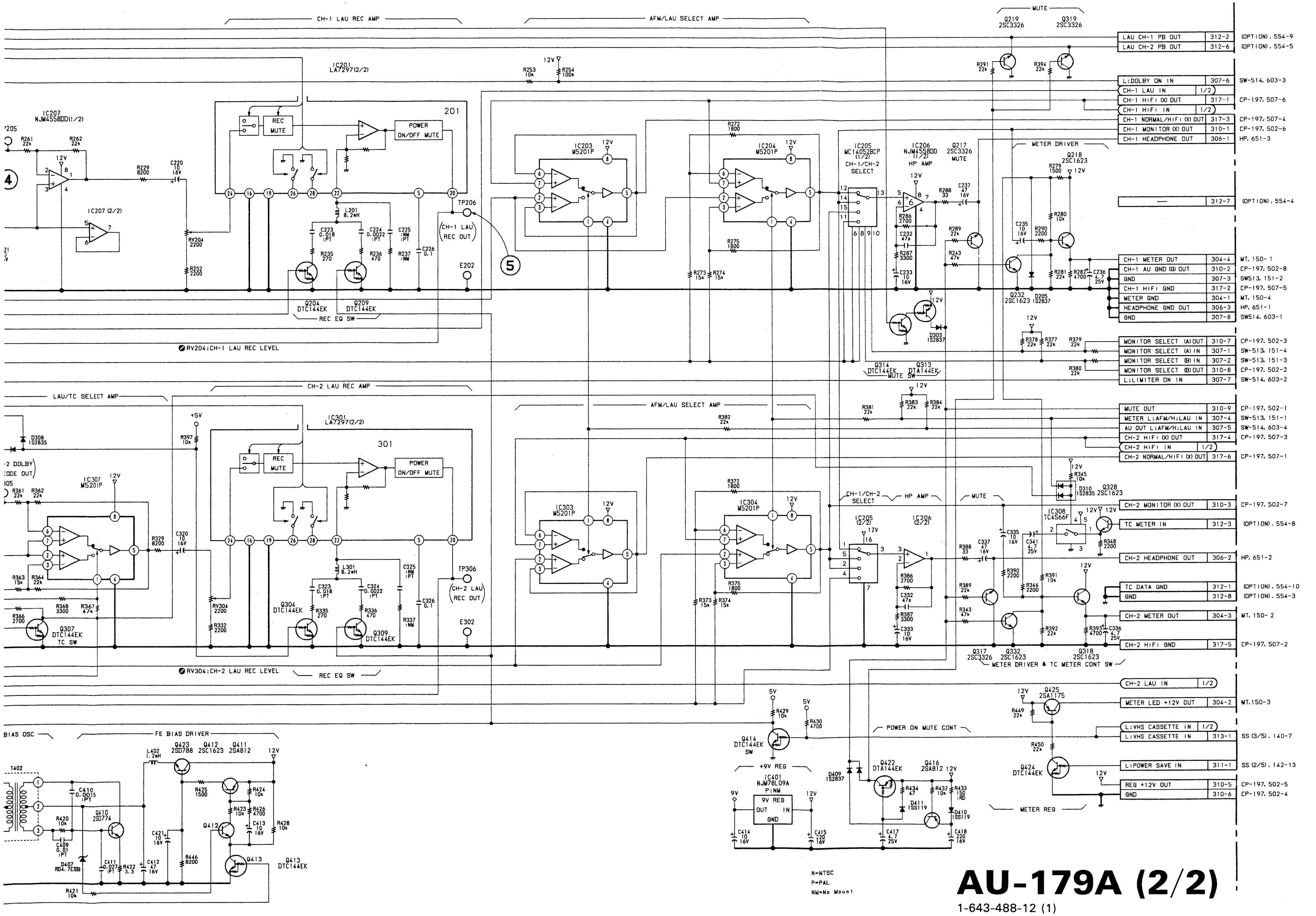
1-643-488-12 (1)
SVO-9620

AU-179A (2/2); NORMAL AUDIO PROCESS

Serial No. 10031 and higher


(OPTION), 554-7 312-4 TC DATA IN
(OPTION), 554-6 312-5 L:TC CH-2 IN
SS (1/5), 142-7 311-7 H:LAU MUTE IN
SS (1/5), 142-9 311-5 H:AU CH-1 EE IN
SS (3/5), 142-10 311-4 H:AUDIO CH-1 REC IN
CH-1 AUDIO HEAD
AH, 616-3 315-3 CH-1 R/P HEAD (X)
AH, 616-4 315-2 CH-1 R/P HEAD (Y)
315-1 CH-1 R/P HEAD (G)
SS (3/5), 142-4 311-10 H:AU CH-2 EE IN
SS (3/5), 142-5 311-9 H:AUDIO CH-2 REC IN
SS (1/5), 142-6 311-8 H:SEARCH IN
CH-2 AUDIO HEAD
AH, 616-1 316-3 CH-2 R/P HEAD (X)
AH, 616-2 316-2 CH-2 R/P HEAD (Y)
316-1 CH-2 R/P HEAD (G)
CH-2 ERASE
AH, 617-1 302-3 AUDIO CH-2 ERASE (Y)
AH, 617-2 302-4 AUDIO CH-2 ERASE (X)
CH-1 ERASE
AH, 617-3 302-2 AUDIO CH-1 ERASE (Y)
AH, 617-4 302-1 AUDIO CH-1 ERASE (X)
FULL ERASE
619-2 303-1 FULL ERASE HEAD (X)
619-1 303-2 FULL ERASE HEAD (Y)
303-3 FULL ERASE HEAD (G)
SS (3/5), 142-11 311-3 FULL ERASE CONT.
EE/PB SW
Q201 DTC144EK
Q301 DTC144EK
CH-1 LAU PB/EE AMP
IC201 LA7297 (1/2) CH-1 LAU PB/EE AMP
201
REC SW
REC/EE EE/PB
MUTE CONT
SP.EP
PB MUTE
EE MUTE
ALC
ALC DET
POWER ON/OFF MUTE
(CH-1 BIAS CURRENT (Y)) TP201
(CH-1 BIAS CURRENT (G)) TP202
IC201 LA7297 (2/3)
TP203 (CH-1 LAU EQAMP OUT)
①
BUFFER
Q205 2SC1623
TP204 (CH-1 LAU EE/PB OUT)
②③
Q206 DTC144EK LIMITER SW
FL201 LPF
CH-1 DOLBY PROCESS
IC202 CXA1102P
202
MODE CONT.
MOA
SC
DET
E201
TP205
④
IC207 NJM4558DD (1/2)
IC207 (2/2)
Q203 DTC144EK
Q227 DTC144EK
Q231 2SC1623
PB EQ CONT
Q230 2SC1623
RV201:CH-1 LAU PB FRQ RESP ADJ
RV202:CH-1 LAU PB LEVEL ADJ
RV206:CH-1 CLOSS TALK CANCELLER
Q312 2SC1623 SW
CH-2 LAU PB/EE AMP
IC301 LA7297 (1/2)
301
(CH-2 BIAS CURRENT (Y)) TP301
(CH-2 BIAS CURRENT (G)) TP302
IC301 LA7297 (2/3) CH-2 REC SW
TP303
Q305 2SC1623 BUFFER
TP304 (CH-2 LAU EE/PB OUT)
FL301 LPF
Q306 DTC144EK LIMITER SW
CH-2 DOLBY PROCESS
IC302 CXA1102P
302
(CH-2 DOLBY ENCODE OUT) TP305
IC307 M5201P
LAU/TC SELECT AMP
Q317 DTC144EK TC SW
E301
Q324 2SC3326
Q323 DTC144EK
REC HEAD VOL CONT SW
Q331 2SC1623
Q327 DTC144EK
Q303 DTC144EK
PB EQ CONT
Q330 2SC1623
Q326 2SC3326 MUTE
RV301:CH-2 LAU PB FRQ RESP ADJ
RV302:CH-2 LAU PB LEVEL ADJ
RV306:CH-2 CLOSS TALK CANCELLER
Q329 2SC3326
Q320 2SC3326
Q322 DTA144EK
MUTE
MUTE SW
RV205:CH-1 LAU BIAS
RV305:CH-2 LAU BIAS
TP401 (CH-1 CURR)
TP402 (CH-2 CURR)
TP403 (FE CURR)
LV401
LV402
Q401 2SB739
Q417 2SC1623
Q418 DTC144EK
RY401
E401
Q419 2SB739
Q420 2SC1623
Q421 DTC144EK
RY402
E402
LV401:CH-1 ERASE CURRENT
LV402:CH-2 ERASE CURRENT
ERASE CHANNEL SELECTOR & CHANNEL CONTROL
T401
Q403 2SD774
CH-1/2 BIAS OSC
Q404 DTC144EK
Q406 2SD788
Q407 2SC1623
Q409 2SC1623
Q408 2SB739
CH-1/2 BIAS OSC DRIVER
BIAS OSC
T402
Q410 2SD774

A | B | C | D | E | F | G | H

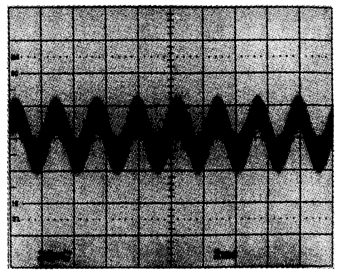

CH-1 LAU REC AMP
AFM/LAU SELECT AMP
IC201 LA7297(2/2)
IC207 NJM4558DD(1/2)
IC207 (2/2)
REC MUTE
POWER ON/OFF MUTE
201
IC203 M5201P
IC204 M5201P
IC205 MC14052BCP (1/2) CH-1/CH-2 SELECT
IC206 NJM4558DD (1/2) HP AMP
Q217 2SC3326 MUTE
Q218 2SC1623
METER DRIVER
MUTE
Q219 2SC3326
Q319 2SC3326
TP206
CH-1 LAU REC OUT
E202
Q204 DTC144EK
Q209 DTC144EK
REC EQ SW
RV204:CH-1 LAU REC LEVEL
Q314 DTC144EK
Q313 DTA144EK
MUTE SW
LAU/TC SELECT AMP
CH-2 LAU REC AMP
IC301 LA7297(2/2)
301
IC307 M5201P
IC303 M5201P
IC304 M5201P
TP306
CH-2 LAU REC OUT
E302
Q304 DTC144EK
Q309 DTC144EK
Q307 DTC144EK TC SW
RV304:CH-2 LAU REC LEVEL
CH-1/CH-2 SELECT
HP AMP
IC308 TC4S66F
Q310 1S2835
Q328 2SC1623
Q317 2SC3326
Q332 2SC1623
Q318 2SC1623
METER DRIVER & TC METER CONT SW
Q425 2SA1175
Q424 DTC144EK
Q414 DTC144EK SW
+9V REG
IC401 NJM78L09A P:NM
9V REG
POWER ON MUTE CONT
Q422 DTA144EK
Q416 2SA812
METER REG
BIAS OSC
FE BIAS DRIVER
Q423 2SD788
Q412 2SC1623
Q411 2SA812
Q410 2SD774
Q413 DTC144EK
D407 RD4.7ESB
LAU CH-1 PB OUT 312-2 (OPTION), 554-9
LAU CH-2 PB OUT 312-6 (OPTION), 554-5
L:DOLBY ON IN 307-6 SW-514, 603-3
CH-1 LAU IN 1/2
CH-1 HIFI (X) OUT 317-1 CP-197, 507-6
CH-1 HIFI IN 1/2
CH-1 NORMAL/HIFI (X) OUT 317-3 CP-197, 507-4
CH-1 MONITOR (X) OUT 310-1 CP-197, 502-6
CH-1 HEADPHONE OUT 306-1 HP, 651-3
312-7 (OPTION), 554-4
CH-1 METER OUT 304-4 MT, 150-1
CH-1 AU GND (G) OUT 310-2 CP-197, 502-8
GND 307-3 SW513, 151-2
CH-1 HIFI GND 317-2 CP-197, 507-5
METER GND 304-1 MT, 150-4
HEADPHONE GND OUT 306-3 HP, 651-1
GND 307-8 SW514, 603-1
MONITOR SELECT (A) OUT 310-7 CP-197, 502-3
MONITOR SELECT (A) IN 307-1 SW-513, 151-4
MONITOR SELECT (B) IN 307-2 SW-513, 151-3
MONITOR SELECT (B) OUT 310-8 CP-197, 502-2
L:LIMITER ON IN 307-7 SW-514, 603-2
MUTE OUT 310-9 CP-197, 502-1
METER L:AFM/H:LAU IN 307-4 SW-513, 151-1
AU OUT L:AFM/H:LAU IN 307-5 SW-514, 603-4
CH-2 HIFI (X) OUT 317-4 CP-197, 507-3
CH-2 HIFI IN 1/2
CH-2 NORMAL/HIFI (X) OUT 317-6 CP-197, 507-1
CH-2 MONITOR (X) OUT 310-3 CP-197, 502-7
TC METER IN 312-3 (OPTION), 554-8
CH-2 HEADPHONE OUT 306-2 HP, 651-2
TC DATA GND 312-1 (OPTION), 554-10
GND 312-8 (OPTION), 554-3
CH-2 METER OUT 304-3 MT, 150-2
CH-2 HIFI GND 317-5 CP-197, 507-2
CH-2 LAU IN 1/2
METER LED +12V OUT 304-2 MT, 150-3
L:VHS CASSETTE IN 1/2
L:VHS CASSETTE IN 313-1 SS (3/5), 140-7
L:POWER SAVE IN 311-1 SS (2/5), 142-13
REG +12V OUT 310-5 CP-197, 502-5
GND 310-6 CP-197, 502-4

N-NTSC
P=PAL
NM=No Mount

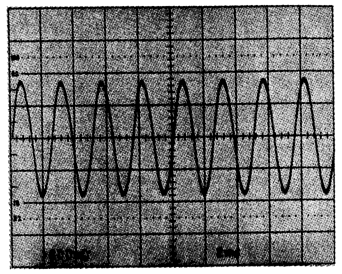
AU-179A (2/2)

1-643-488-12 (1)
SVO-9620

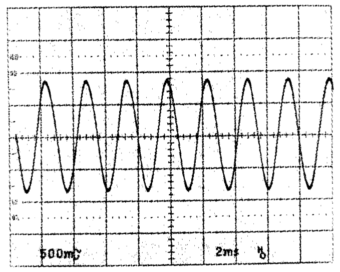
① TP203 (I-4) PB mode



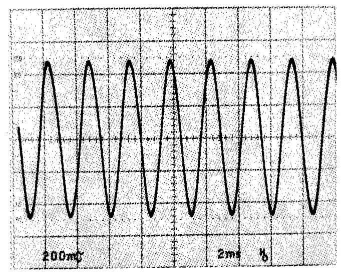
② TP204 (I-3) PB mode



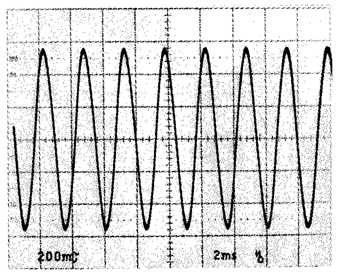
③ TP204 (I-3) STOP (E-E) mode



④ TP205 (I-2) STOP (E-E) mode



⑤ TP206 (I-3) STOP (E-E) mode



Measurement Condition

CH-1, AUDIO IN: 400Hz −6dBu
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS (NORMAL: 400Hz)

I J K L M N O P

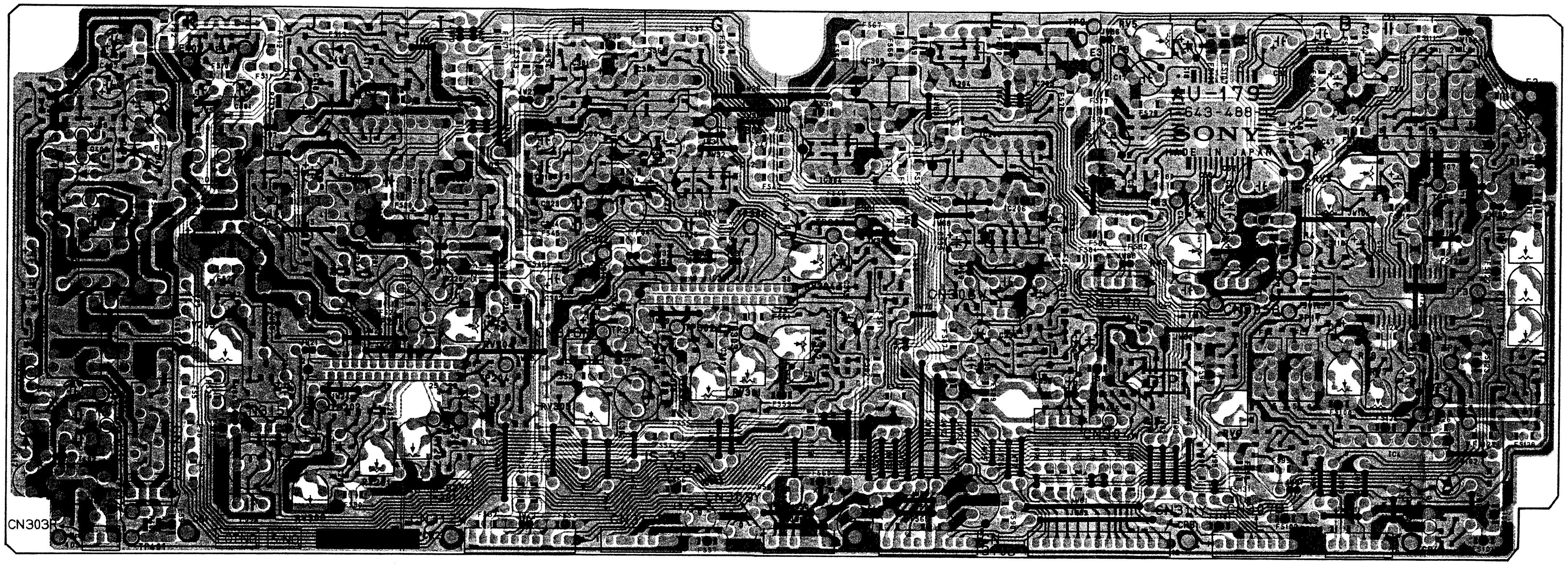
Serial No. 10001-10030

AU-179A ; AFM PROCESS/NORMAL AUDIO PROCESS

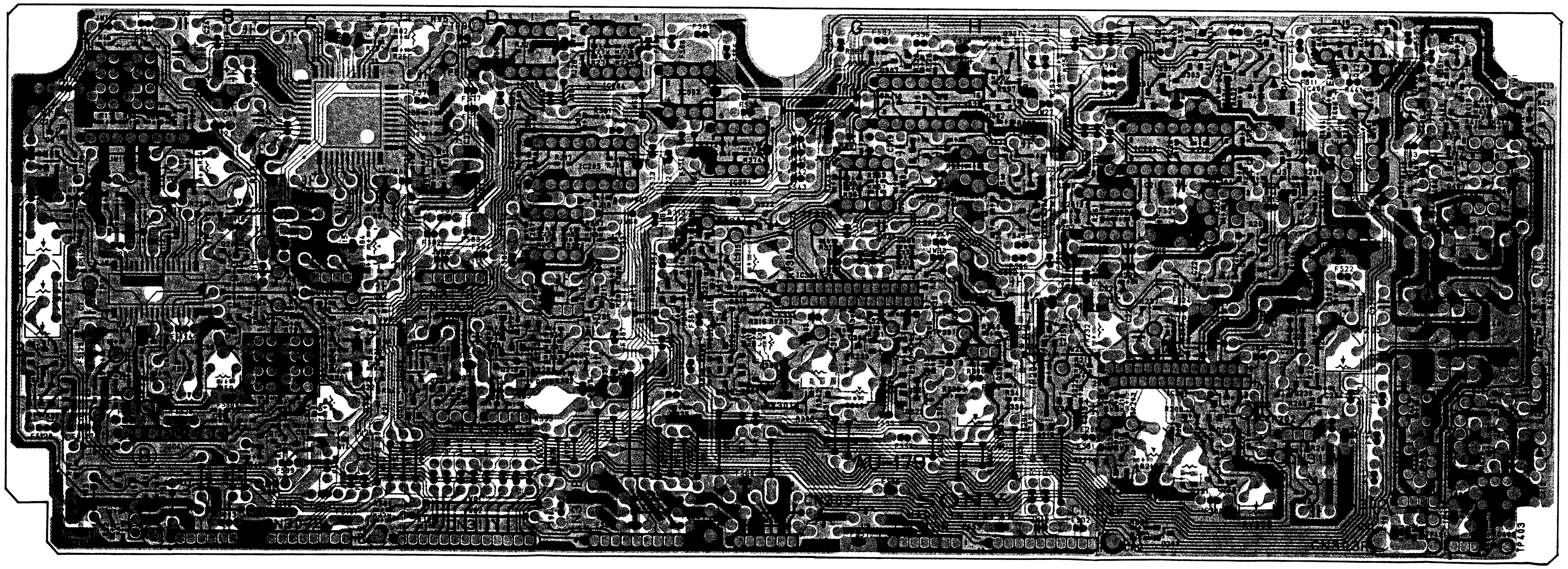
AU-179A (1-643-488-11)

CN302	K-4	IC203	D-1	Q409	K-1 *	TP403	L-4
CN303	L-4	IC204	E-1	Q410	K-4		
CN304	D-4	IC205	E-1	Q411	L-3 *		
CN305	C-3	IC206	E-2	Q412	L-1 *		
CN306	E-3	IC207	I-2	Q413	L-1 *		
CN307	C-4	IC301	G-3	Q414	L-1 *		
CN308	B-4	IC302	G-1	Q416	J-1 *		
CN309	G-4	IC303	F-1	Q417	K-1 *		
CN310	E-4	IC201	J-3	Q418	K-1 *		
CN311	C-4	IC304	F-2	Q419	K-2		
CN312	I-4	IC307	G-2	Q420	K-1 *		
CN313	G-4	IC308	D-3 *	Q421	K-1 *		
CN315	J-4	IC401	K-2	Q422	J-1 *		
CN316	H-3			Q423	L-3		
CN317	D-3	LV201	J-4	Q424	D-3 *		
		LV301	G-3	Q425	D-4		
CR1	K-4	LV401	K-4				
CR2	I-4	LV402	K-4	RV1	A-3		
CR3	C-4			RV2	A-2		
CR4	A-4	Q4	C-3 *	RV3	B-2		
		Q5	D-2 *	RV4	B-2		
D2	A-4 *	Q8	C-4 *	RV5	D-1		
D8	A-2 *	Q10	A-4	RV6	C-4		
D201	K-3 *	Q12	C-4 *	RV7	B-3		
D202	J-3 *	Q13	C-3 *	RV8	B-3		
D203	I-4 *	Q14	C-4 *	RV9	D-2		
D205	D-3 *	Q20	B-2 *	RV201	I-4		
D301	H-3 *	Q21	B-3 *	RV202	I-4		
D302	H-1 *	Q201	J-2 *	RV204	I-3		
D303	J-1 *	Q203	I-4 *	RV205	K-3		
D308	H-1 *	Q204	J-2 *	RV206	G-3		
D309	F-3 *	Q205	H-3 *	RV301	G-3		
D310	D-3 *	Q206	I-4 *	RV302	F-3		
D311	D-3 *	Q209	J-2 *	RV304	F-3		
D401	K-2	Q217	E-3 *	RV305	H-4		
D402	K-2	Q218	E-3 *	RV306	J-4		
D403	L-2	Q219	H-4 *				
D404	K-2	Q223	K-4 *	RY401	L-3		
D405	K-2	Q224	K-4 *	RV402	K-3		
D406	K-1 *	Q225	K-4 *				
D407	L-4	Q227	I-4 *	T401	L-2		
D409	J-1 *	Q301	H-1 *	T402	L-4		
D410	J-1	Q303	F-3 *				
D411	J-1	Q304	H-2 *	TP1	A-3		
D412	K-2	Q305	F-2 *	TP2	A-3		
D413	K-2	Q306	F-3 *	TP3	A-3		
D414	K-1	Q307	G-1 *	TP4	B-2		
		Q309	H-2 *	TP5	A-2		
E1	A-4	Q312	L-1 *	TP7	C-3		
E2	A-1	Q313	I-1 *	TP8	D-1		
E3	D-1	Q314	I-1 *	TP9	D-1		
E201	I-4	Q317	E-3 *	TP10	B-4		
E202	J-2	Q318	E-3 *	TP11	B-3		
E301	F-2	Q319	E-3 *	TP12	C-3		
E302	H-2	Q320	H-2 *	TP13	D-2		
E401	K-1	Q322	F-2 *	TP201	J-4		
E402	K-1	Q323	G-4 *	TP202	J-4		
E403	L-4	Q324	G-3 *	TP203	I-4		
		Q325	G-3 *	TP204	I-3		
FL1	A-1	Q326	F-3 *	TP205	I-2		
FL2	C-3	Q327	F-3 *	TP206	I-3		
FL201	J-2	Q328	D-3 *	TP301	H-3		
FL301	H-2	Q329	H-2 *	TP302	G-3		
		Q401	K-2	TP303	G-3		
IC1	B-2 *	Q403	L-2	TP304	F-2		
IC2	C-2 *	Q404	K-2 *	TP305	G-1		
IC5	A-2 *	Q406	L-2	TP306	G-2		
IC201	J-3	Q407	L-2 *	TP401	K-4		
IC202	I-1	Q408	L-1	TP402	K-4		

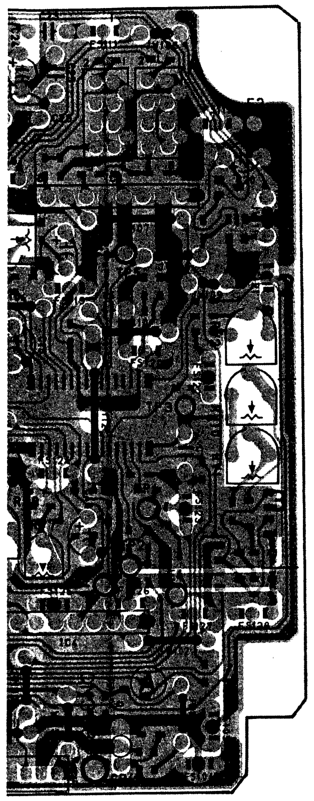
* mark ; B SIDE mount



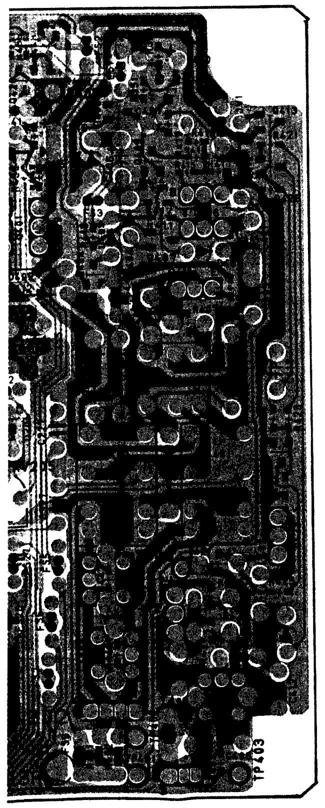
AU-179A — A SIDE —
1-643-488-11 (1)
SVO-9620



AU-179A — B SIDE —
1-643-488-11 (1)
SVO-9620



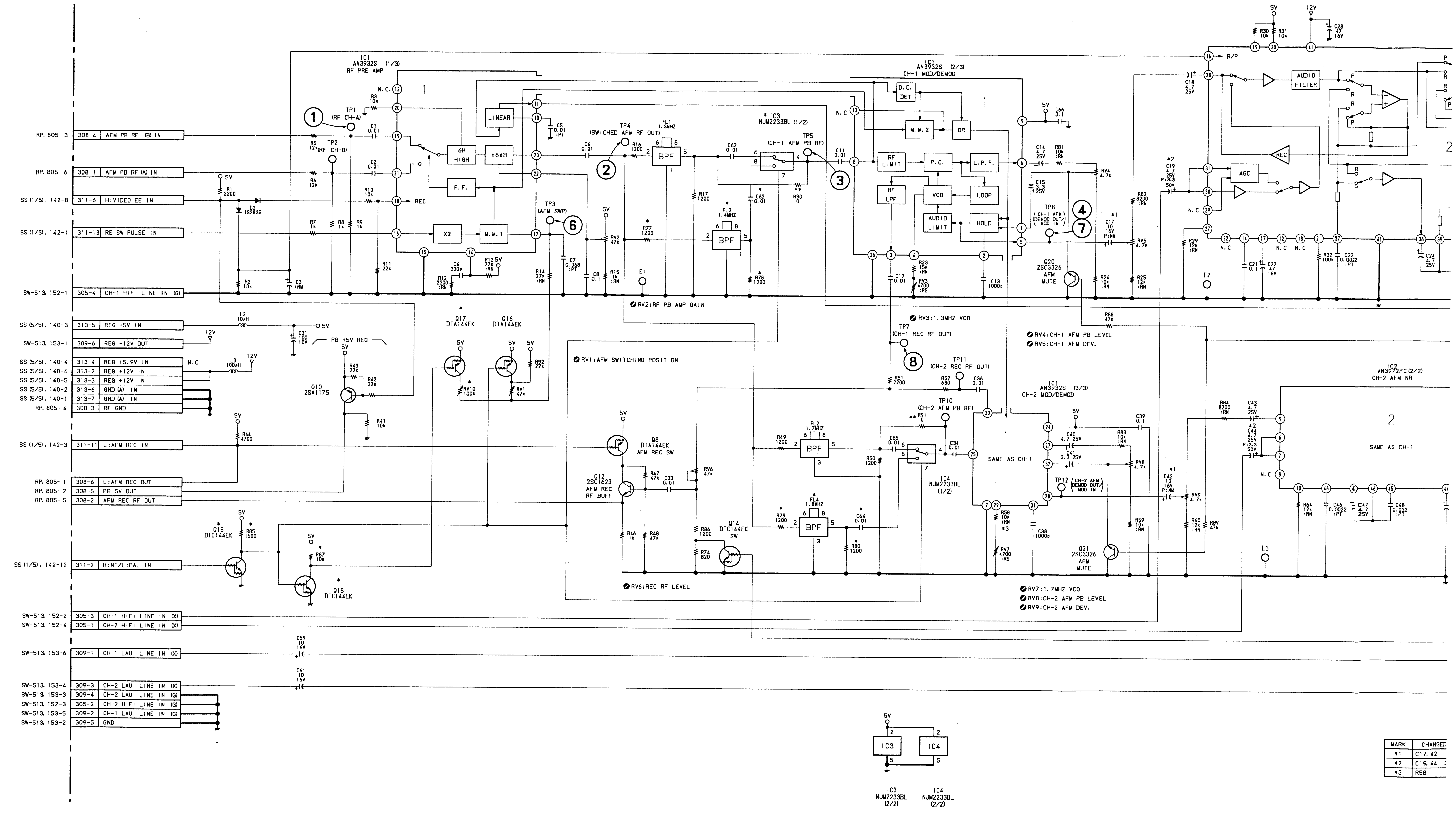
79A — A SIDE —
38-11 (1)
0



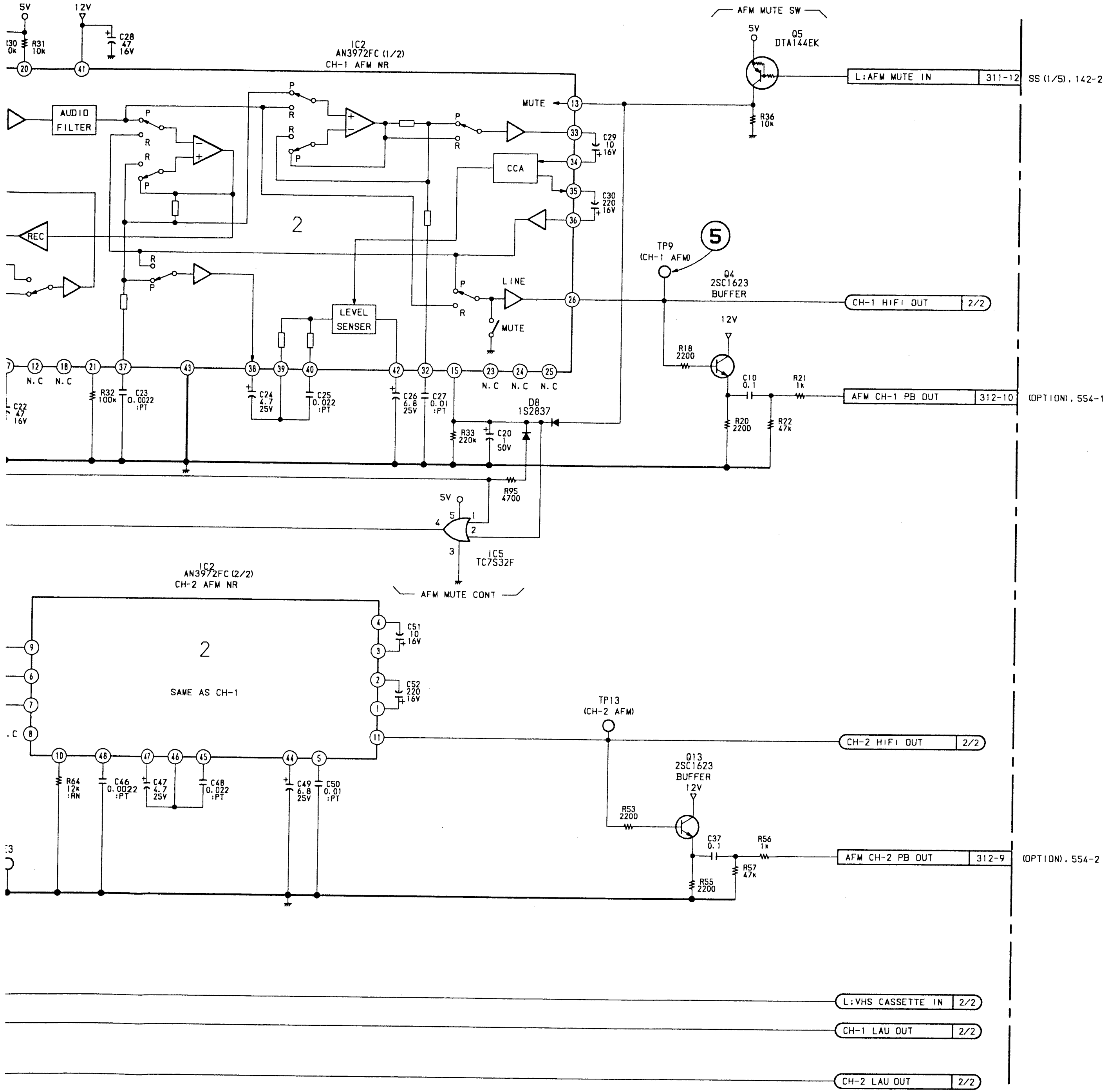
U-179A — B SIDE —
-643-488-11 (1)
VO-9620

AU-179A (1/2); AFM PROCESS

Serial No. 10001-10030


RP. 805-3 | 308-4 | AFM PB RF (B) IN
RP. 805-6 | 308-1 | AFM PB RF (A) IN
SS (1/5). 142-8 | 311-6 | H:VIDEO EE IN
SS (1/5). 142-1 | 311-13 | RE SW PULSE IN
SW-513. 152-1 | 305-4 | CH-1 HIFI LINE IN (G)
SS (5/5). 140-3 | 313-5 | REG +5V IN
SW-513. 153-1 | 309-6 | REG +12V OUT
SS (5/5). 140-4 | 313-4 | REG +5.9V IN
SS (5/5). 140-6 | 313-2 | REG +12V IN
SS (5/5). 140-5 | 313-3 | REG +12V IN
SS (5/5). 140-2 | 313-6 | GND (A) IN
SS (5/5). 140-1 | 313-7 | GND (A) IN
RP. 805-4 | 308-3 | RF GND
SS (1/5). 142-3 | 311-11 | L:AFM REC IN
RP. 805-1 | 308-6 | L:AFM REC OUT
RP. 805-2 | 308-5 | PB 5V OUT
RP. 805-5 | 308-2 | AFM REC RF OUT
SS (1/5). 142-12 | 311-2 | H:NT/L:PAL IN
SW-513. 152-2 | 305-3 | CH-1 HIFI LINE IN (X)
SW-513. 152-4 | 305-1 | CH-2 HIFI LINE IN (X)
SW-513. 153-6 | 309-1 | CH-1 LAU LINE IN (X)
SW-513. 153-4 | 309-3 | CH-2 LAU LINE IN (X)
SW-513. 153-3 | 309-4 | CH-2 LAU LINE IN (G)
SW-513. 152-3 | 305-2 | CH-2 HIFI LINE IN (G)
SW-513. 153-5 | 309-2 | CH-1 LAU LINE IN (G)
SW-513. 153-2 | 309-5 | GND
IC1 AN3932S (1/3) RF PRE AMP
IC1 AN3932S (2/3) CH-1 MOD/DEMOD
IC1 AN3932S (3/3) CH-2 MOD/DEMOD
IC2 AN3972FC (2/2) CH-2 AFM NR
*IC3 NJM2233BL (1/2)
IC4 NJM2233BL (1/2)
IC3 NJM2233BL (2/2)
IC4 NJM2233BL (2/2)
TP1 (RF CH-A)
TP2 (RF CH-B)
TP3 (AFM SWP)
TP4 (SWICHED AFM RF OUT)
TP5 (CH-1 AFM PB RF)
TP7 (CH-1 REC RF OUT)
TP8 (CH-1 AFM DEMOD OUT/MOD IN)
TP10 (CH-2 AFM PB RF)
TP11 (CH-2 REC RF OUT)
TP12 (CH-2 AFM DEMOD OUT/MOD IN)
LINEAR
6H HIGH
±6dB
F.F.
X2
M.M.1
M.M.2
D.O. DET
OR
RF LIMIT
P.C.
L.P.F.
RF LPF
VCO
LOOP
AUDIO LIMIT
HOLD
AUDIO FILTER
AGC
REC
R/P
BPF
FL1 1.3MHZ
FL2 1.7MHZ
FL3 1.4MHZ
FL4 1.8MHZ
PB +5V REG
Q10 2SA1175
Q17 DTA144EK
Q16 DTA144EK
Q8 DTA144EK AFM REC SW
Q12 2SC1623 AFM REC RF BUFF
Q14 DTC144EK SW
Q15 DTC144EK
Q18 DTC144EK
Q20 2SC3326 AFM MUTE
Q21 2SC3326 AFM MUTE
D2 1S2835
RV1:AFM SWITCHING POSITION
RV2:RF PB AMP GAIN
RV3:1.3MHZ VCO
RV4:CH-1 AFM PB LEVEL
RV5:CH-1 AFM DEV.
RV6:REC RF LEVEL
RV7:1.7MHZ VCO
RV8:CH-2 AFM PB LEVEL
RV9:CH-2 AFM DEV.
SAME AS CH-1
E1
E2
E3
5V
12V
N.C

MARK	CHANGED
*1	C17, 42
*2	C19, 44
*3	R58


5V
12V
C28 47 16V
R31 10k
IC2 AN3972FC (1/2) CH-1 AFM NR
AFM MUTE SW
Q5 DTA144EK
L:AFM MUTE IN
311-12
SS (1/5), 142-2
R36 10k
AUDIO FILTER
MUTE
CCA
C29 10 16V
C30 220 16V
REC
2
TP9 (CH-1 AFM)
5
Q4 2SC1623 BUFFER
LINE
MUTE
LEVEL SENSER
CH-1 HIFI OUT
2/2
12V
R18 2200
C10 0.1
R21 1k
AFM CH-1 PB OUT
312-10
(OPTION), 554-1
N.C
R32 100k
C23 0.022 :PT
C24 4.7 25V
C25 0.022 :PT
C26 6.8 25V
C27 0.01 :PT
R33 220k
C20 1 50V
D8 1S2837
R20 2200
R22 47k
C22 47 16V
R95 4700
5V
IC5 TC7S32F
AFM MUTE CONT
IC2 AN3972FC (2/2) CH-2 AFM NR
2
SAME AS CH-1
C51 10 16V
C52 220 16V
TP13 (CH-2 AFM)
CH-2 HIFI OUT
2/2
Q13 2SC1623 BUFFER
12V
R53 2200
C37 0.1
R56 1k
R57 47k
R55 2200
AFM CH-2 PB OUT
312-9
(OPTION), 554-2
R64 12k :RN
C46 0.0022 :PT
C47 4.7 25V
C48 0.022 :PT
C49 6.8 25V
C50 0.01 :PT
L:VHS CASSETTE IN
2/2
CH-1 LAU OUT
2/2
CH-2 LAU OUT
2/2

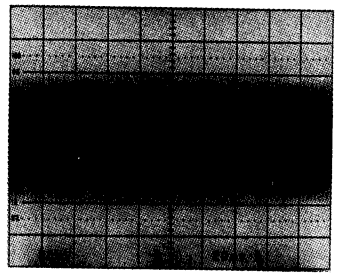
MARK	CHANGED INFORMATION	SERIAL NO.
*1	C17, 42 47µF → 10µF	J:10011- UC:10021-
*2	C19, 44 3.3µF → 4.7µF	
*3	R58 12k → 10k	

NOTE:* mark is NTSC No-Mount.
** mark is PAL No-Mount.

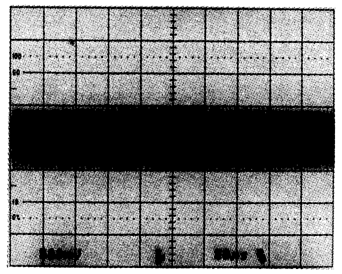
AU-179A (1/2)

1-643-488-11 (1)
SVO-9620

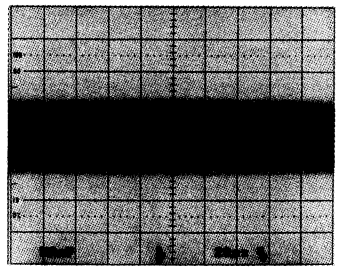
① TP1 (A-3) PB mode



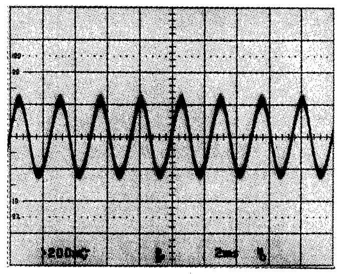
② TP4 (B-2) PB mode



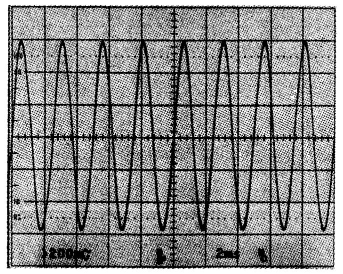
③ TP5 (A-2) PB mode



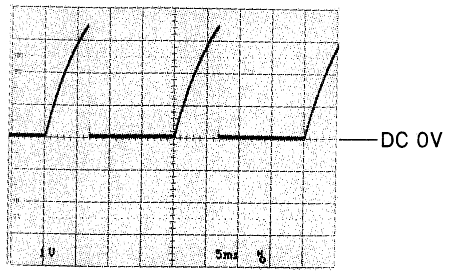
④ TP8 (D-1) PB mode



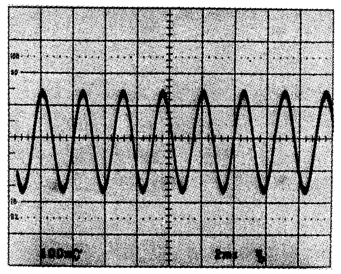
⑤ TP9 (D-1) PB mode



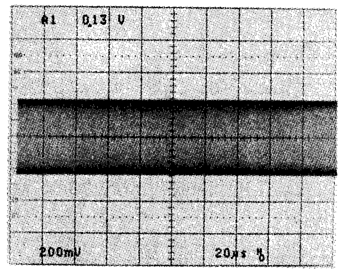
⑥ TP3 (A-3) PB mode



⑦ TP8 (D-1) STOP (E-E) mode



⑧ TP7 (C-3) STOP (E-E) mode

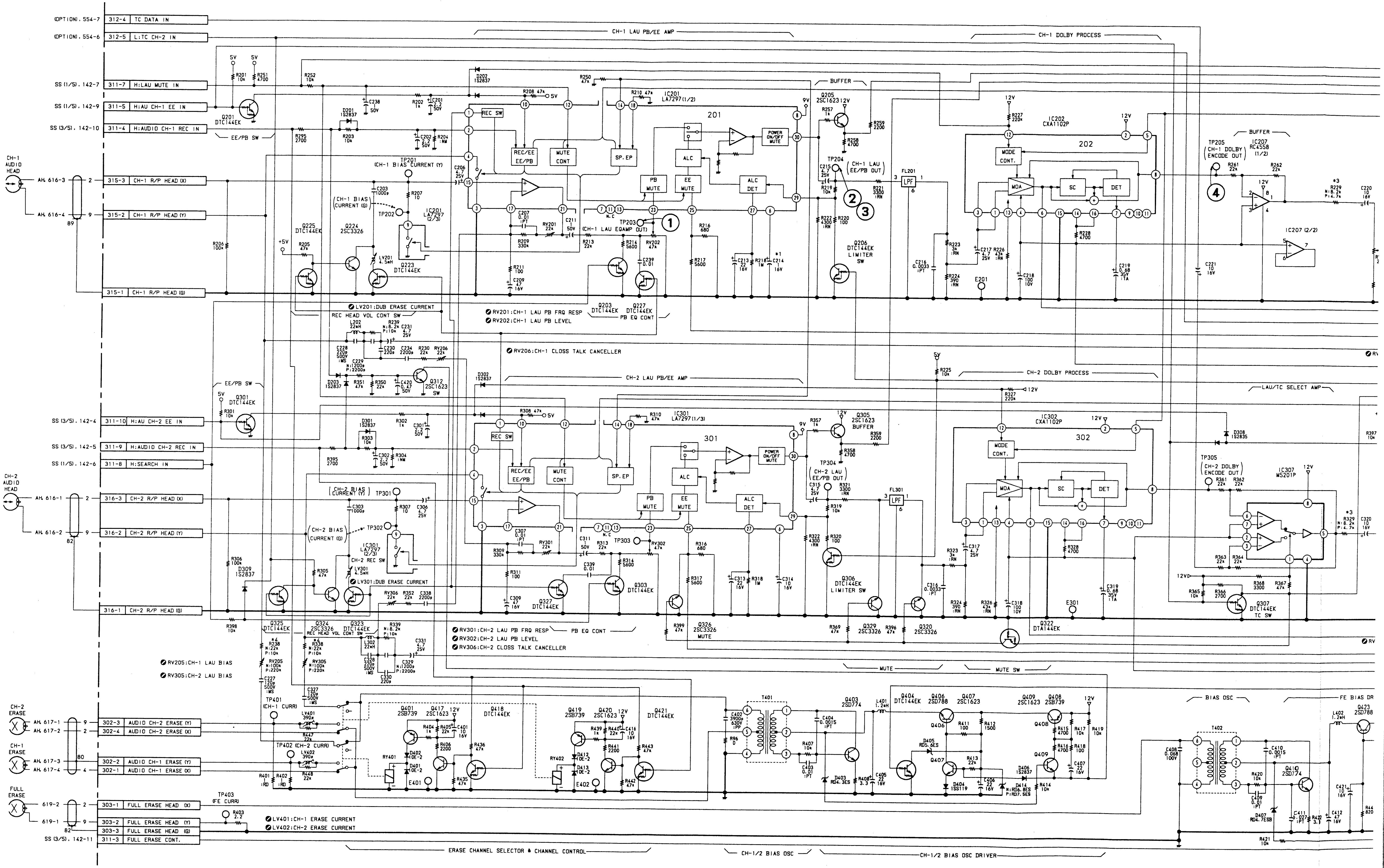


Measurement Condition
CH-1, AUDIO IN: 400Hz −6dBu
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS (Hi-Fi)

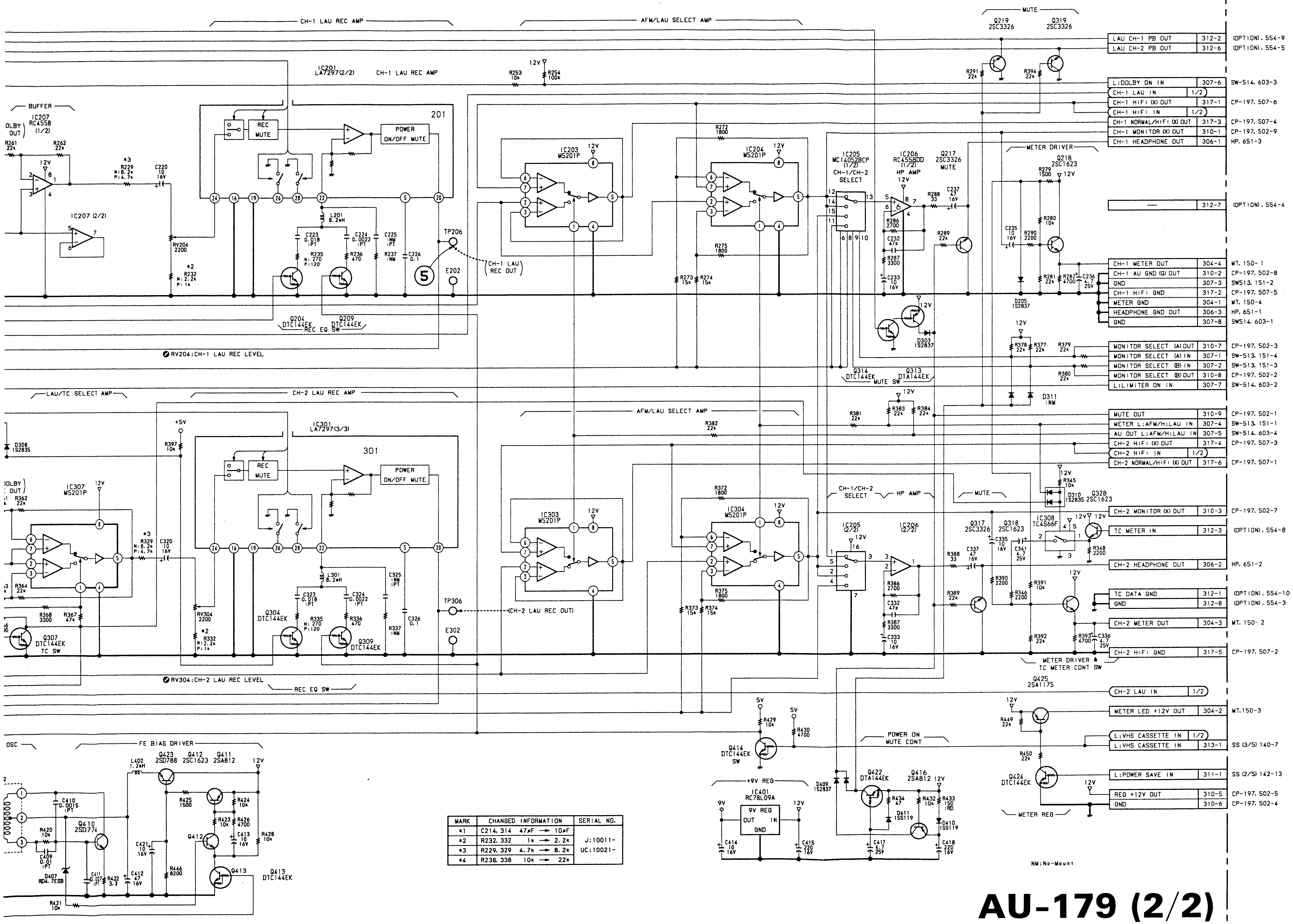
AU-179A (2/2)

AU-179A (2/2); NORMAL AUDIO PROCESS

Serial No. 10001-10030


(OPTION), 554-7 312-4 TC DATA IN
(OPTION), 554-6 312-5 L:TC CH-2 IN
SS (1/5), 142-7 311-7 H:LAU MUTE IN
SS (1/5), 142-9 311-5 H:AU CH-1 EE IN
SS (3/5), 142-10 311-4 H:AUDIO CH-1 REC IN
CH-1 AUDIO HEAD
AH, 616-3 315-3 CH-1 R/P HEAD (X)
AH, 616-4 315-2 CH-1 R/P HEAD (Y)
315-1 CH-1 R/P HEAD (G)
CH-1 LAU PB/EE AMP
CH-1 DOLBY PROCESS
EE/PB SW
BUFFER
IC201 LA7297 (1/2)
201
REC SW
REC/EE EE/PB
MUTE CONT
SP. EP
PB MUTE
EE MUTE
ALC
ALC DET
POWER ON/OFF MUTE
TP201 (CH-1 BIAS CURRENT (Y))
(CH-1 BIAS CURRENT (G))
TP202
TP203 (CH-1 LAU EQAMP OUT)
TP204 (CH-1 LAU EE/PB OUT)
Q205 2SC1623 12V
Q206 DTC144EK LIMITER SW
FL201 LPF
IC202 CXA1102P
202
MODE CONT.
MOA
SC
DET
E201
TP205 (CH-1 DOLBY ENCODE OUT)
BUFFER
IC207 RC4558 (1/2)
IC207 (2/2)
Q201 DTC144EK
Q225 DTC144EK
Q224 2SC3326
Q223 DTC144EK
LV201
Q203 DTC144EK
Q227 DTC144EK
PB EQ CONT
LV201:DUB ERASE CURRENT
REC HEAD VOL CONT SW
RV201:CH-1 LAU PB FRQ RESP
RV202:CH-1 LAU PB LEVEL
RV206:CH-1 CLOSS TALK CANCELLER
Q312 2SC1623 SW
CH-2 LAU PB/EE AMP
CH-2 DOLBY PROCESS
LAU/TC SELECT AMP
EE/PB SW
Q301 DTC144EK
SS (3/5), 142-4 311-10 H:AU CH-2 EE IN
SS (3/5), 142-5 311-9 H:AUDIO CH-2 REC IN
SS (1/5), 142-6 311-8 H:SEARCH IN
CH-2 AUDIO HEAD
AH, 616-1 316-3 CH-2 R/P HEAD (X)
AH, 616-2 316-2 CH-2 R/P HEAD (Y)
316-1 CH-2 R/P HEAD (G)
IC301 LA7297 (1/3)
301
IC301 LA7297 (2/3)
CH-2 REC SW
(CH-2 BIAS CURRENT (Y)) TP301
(CH-2 BIAS CURRENT (G)) TP302
TP303
LV301:DUB ERASE CURRENT
Q305 2SC1623 BUFFER
TP304 (CH-2 LAU EE/PB OUT)
Q306 DTC144EK LIMITER SW
FL301 LPF
IC302 CXA1102P
302
E301
TP305 (CH-2 DOLBY ENCODE OUT)
IC307 M5201P
Q307 DTC144EK TC SW
Q322 DTA144EK
Q329 2SC3326
Q320 2SC3326
Q326 2SC3326 MUTE
Q327 DTC144EK
Q303 DTC144EK
Q325 DTC144EK
Q324 2SC3326
Q323 DTC144EK
REC HEAD VOL CONT SW
RV301:CH-2 LAU PB FRQ RESP
RV302:CH-2 LAU PB LEVEL
RV306:CH-2 CLOSS TALK CANCELLER
PB EQ CONT
MUTE
MUTE SW
RV205:CH-1 LAU BIAS
RV305:CH-2 LAU BIAS
CH-2 ERASE
AH, 617-1 302-3 AUDIO CH-2 ERASE (Y)
AH, 617-2 302-4 AUDIO CH-2 ERASE (X)
CH-1 ERASE
AH, 617-3 302-2 AUDIO CH-1 ERASE (Y)
AH, 617-4 302-1 AUDIO CH-1 ERASE (X)
FULL ERASE
619-2 303-1 FULL ERASE HEAD (X)
619-1 303-2 FULL ERASE HEAD (Y)
303-3 FULL ERASE HEAD (G)
SS (3/5), 142-11 311-3 FULL ERASE CONT.
TP401 (CH-1 CURR)
TP402 (CH-2 CURR)
TP403 (FE CURR)
LV401:CH-1 ERASE CURRENT
LV402:CH-2 ERASE CURRENT
Q401 2SB739
Q417 2SC1623
Q418 DTC144EK
RY401
E401
Q419 2SB739
Q420 2SC1623
Q421 DTC144EK
RY402
E402
T401
Q403 2SD774
Q404 DTC144EK
Q406 2SD788
Q407 2SC1623
Q409 2SC1623
Q408 2SB739
BIAS OSC
T402
Q410 2SD774
FE BIAS DR
Q423 2SD788
ERASE CHANNEL SELECTOR & CHANNEL CONTROL
CH-1/2 BIAS OSC
CH-1/2 BIAS OSC DRIVER
①
②
③
④
A
B
C
D
E
F
G
H

13-27

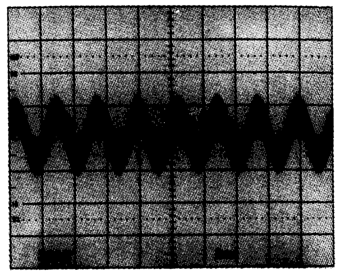

CH-1 LAU REC AMP
AFM/LAU SELECT AMP
MUTE
BUFFER
IC207 RC4558 (1/2)
IC207 (2/2)
IC201 LA7297(2/2)
REC MUTE
POWER ON/OFF MUTE
201
IC203 M5201P
IC204 M5201P
IC205 MC14052BCP (1/2) CH-1/CH-2 SELECT
IC206 RC4558DD (1/2) HP AMP
Q217 2SC3326 MUTE
Q219 2SC3326
Q319 2SC3326
METER DRIVER
Q218 2SC1623
TP206
E202
CH-1 LAU REC OUT
Q204 DTC144EK
Q209 DTC144EK
REC EQ SW
RV204:CH-1 LAU REC LEVEL
Q314 DTC144EK
Q313 DTA144EK
MUTE SW
D311 :NM
LAU/TC SELECT AMP
CH-2 LAU REC AMP
IC301 LA7297(3/3)
301
IC307 M5201P
IC303 M5201P
IC304 M5201P
CH-1/CH-2 SELECT
HP AMP
IC205 (2/2)
IC206 (2/2)
Q317 2SC3326
Q318 2SC1623
IC308 TC4S66F
Q328 2SC1623
TP306
E302
CH-2 LAU REC OUT
Q304 DTC144EK
Q309 DTC144EK
Q307 DTC144EK TC SW
RV304:CH-2 LAU REC LEVEL
REC EQ SW
METER DRIVER & TC METER CONT SW
Q425 2SA1175
OSC
FE BIAS DRIVER
Q423 2SD788
Q412 2SC1623
Q411 2SA812
Q410 2SD774
Q413 DTC144EK
Q414 DTC144EK SW
+9V REG
IC401 RC78L09A
9V REG
POWER ON MUTE CONT
Q422 DTA144EK
Q416 2SA812
METER REG
Q424 DTC144EK
LAU CH-1 PB OUT 312-2 (OPTION). 554-9
LAU CH-2 PB OUT 312-6 (OPTION). 554-5
L:DOLBY ON IN 307-6 SW-514. 603-3
CH-1 LAU IN 1/2
CH-1 HIFI (X) OUT 317-1 CP-197. 507-6
CH-1 HIFI IN 1/2
CH-1 NORMAL/HIFI (X) OUT 317-3 CP-197. 507-4
CH-1 MONITOR (X) OUT 310-1 CP-197. 502-9
CH-1 HEADPHONE OUT 306-1 HP. 651-3
312-7 (OPTION). 554-4
CH-1 METER OUT 304-4 MT. 150-1
CH-1 AU GND (G) OUT 310-2 CP-197. 502-8
GND 307-3 SW513. 151-2
CH-1 HIFI GND 317-2 CP-197. 507-5
METER GND 304-1 MT. 150-4
HEADPHONE GND OUT 306-3 HP. 651-1
GND 307-8 SW514. 603-1
MONITOR SELECT (A) OUT 310-7 CP-197. 502-3
MONITOR SELECT (A) IN 307-1 SW-513. 151-4
MONITOR SELECT (B) IN 307-2 SW-513. 151-3
MONITOR SELECT (B) OUT 310-8 CP-197. 502-2
L:LIMITER ON IN 307-7 SW-514. 603-2
MUTE OUT 310-9 CP-197. 502-1
METER L:AFM/H:LAU IN 307-4 SW-513. 151-1
AU OUT L:AFM/H:LAU IN 307-5 SW-514. 603-4
CH-2 HIFI (X) OUT 317-4 CP-197. 507-3
CH-2 HIFI IN 1/2
CH-2 NORMAL/HIFI (X) OUT 317-6 CP-197. 507-1
CH-2 MONITOR (X) OUT 310-3 CP-197. 502-7
TC METER IN 312-3 (OPTION). 554-8
CH-2 HEADPHONE OUT 306-2 HP. 651-2
TC DATA GND 312-1 (OPTION). 554-10
GND 312-8 (OPTION). 554-3
CH-2 METER OUT 304-3 MT. 150-2
CH-2 HIFI GND 317-5 CP-197. 507-2
CH-2 LAU IN 1/2
METER LED +12V OUT 304-2 MT.150-3
L:VHS CASSETTE IN 1/2
L:VHS CASSETTE IN 313-1 SS (3/5) 140-7
L:POWER SAVE IN 311-1 SS (2/5) 142-13
REG +12V OUT 310-5 CP-197. 502-5
GND 310-6 CP-197. 502-4
NM:No-Mount

MARK	CHANGED INFORMATION	SERIAL NO.
*1	C214, 314 47μF → 10μF	J:10011- UC:10021-
*2	R232, 332 1k → 2.2k	
*3	R229, 329 4.7k → 8.2k	
*4	R238, 338 10k → 22k	

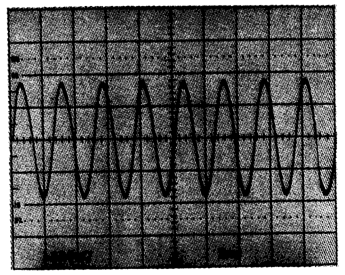
AU-179 (2/2)

1-643-488-11 (1)
SVO-9620

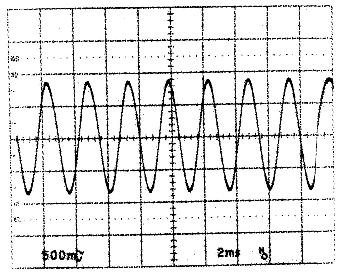
① TP203 (I-4) PB mode



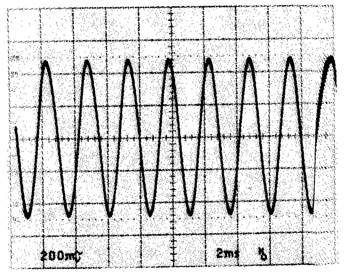
② TP204 (I-3) PB mode



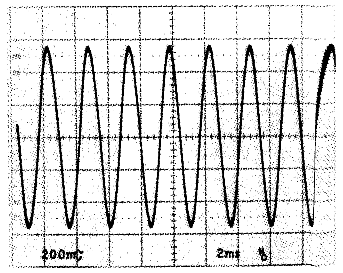
③ TP204 (I-3) STOP (E-E) mode



④ TP205 (I-2) STOP (E-E) mode



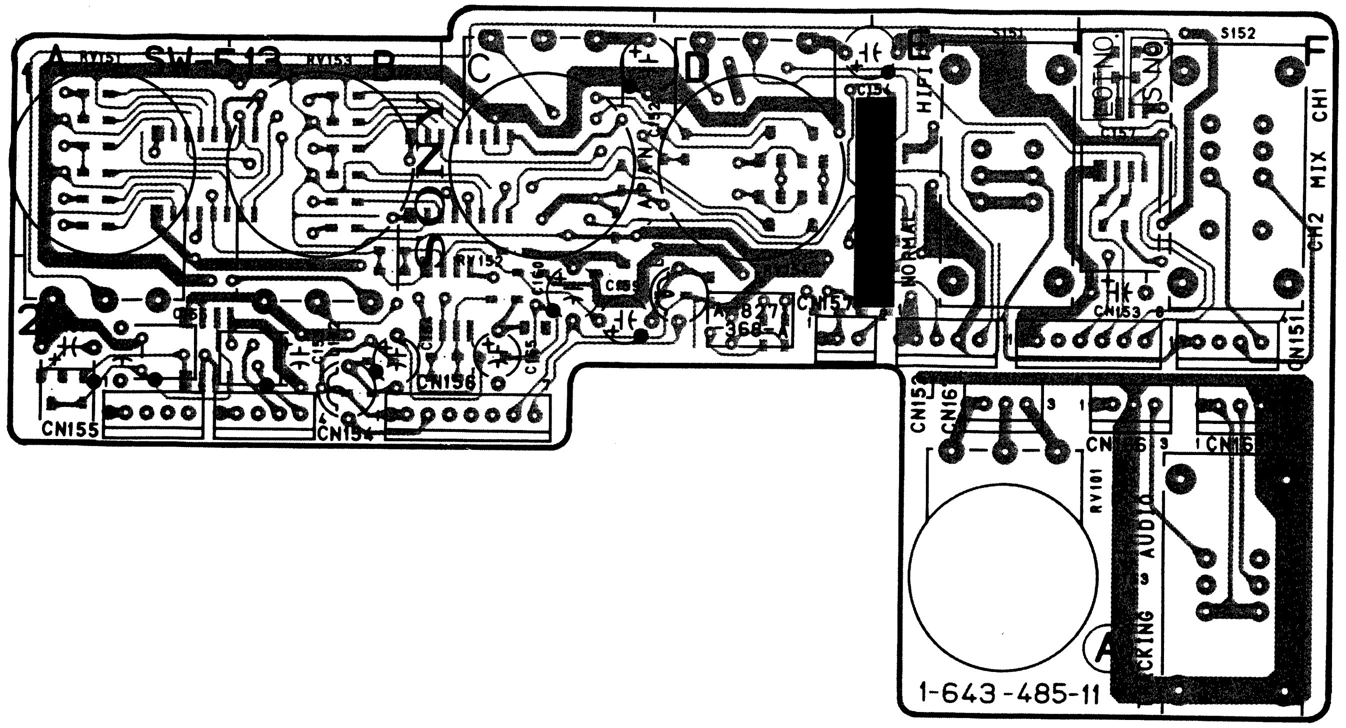
⑤ TP206 (I-3) STOP (E-E) mode



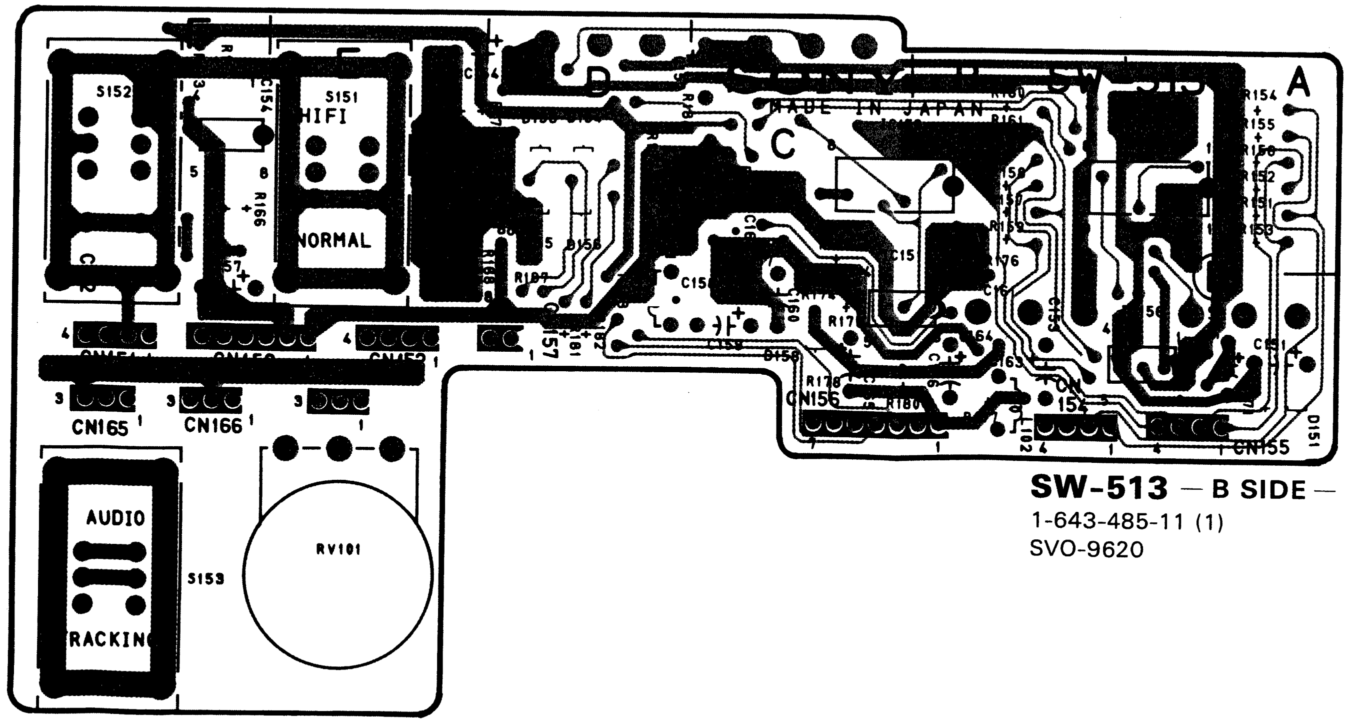
Measurement Condition

CH-1, AUDIO IN: 400Hz −6dB
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS (NORMAL: 400Hz)

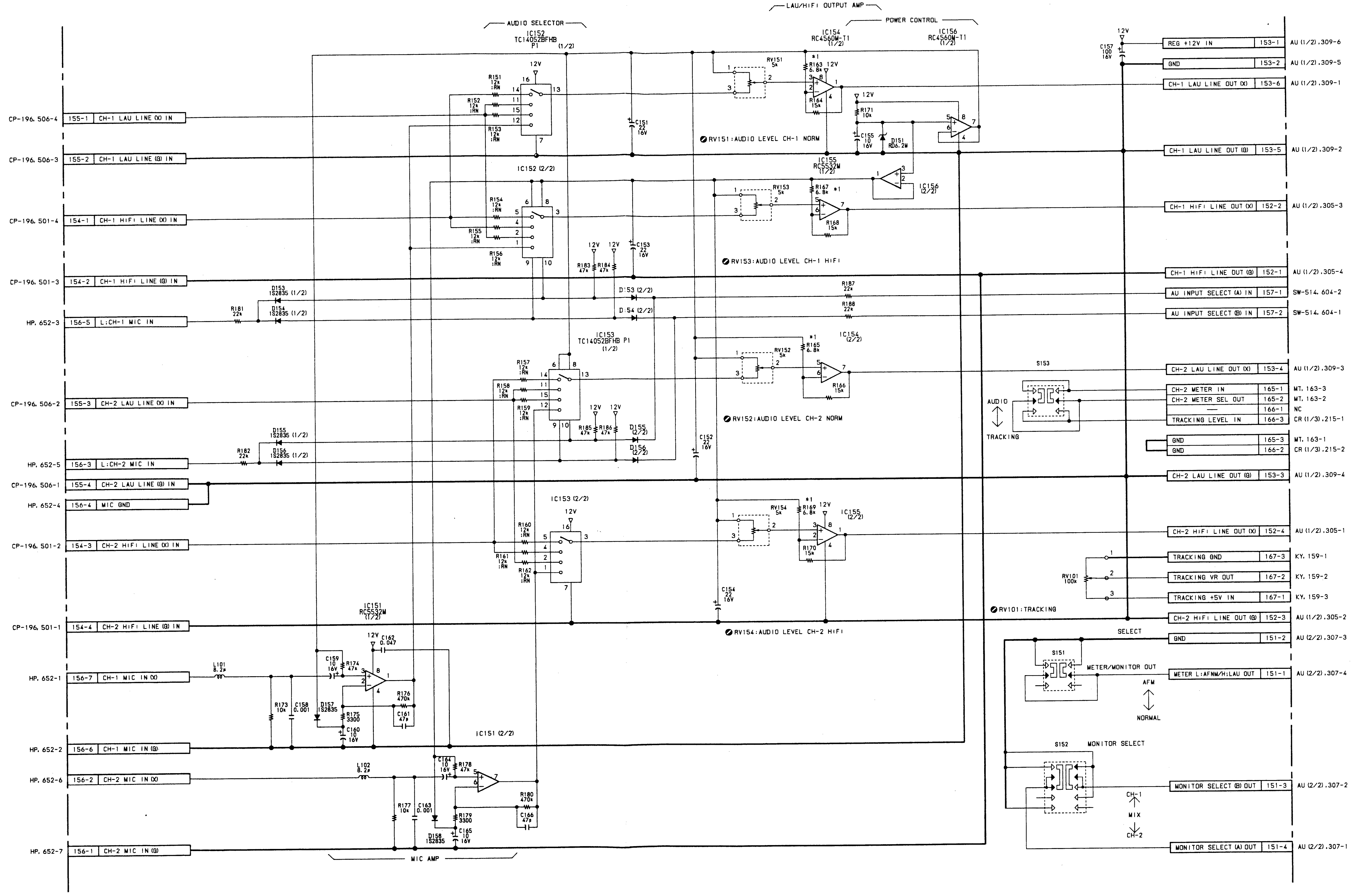
SW-513; AUDIO SIGNAL SELECTOR


SW-513
RV151
RV153
A
B
C
D
E
F
S151
S152
HIFI
NORMAL
CH1
MIX
CH2
CN151
CN152
CN153
CN154
CN155
CN156
CN157
CN165
CN166
RV152
RV101
AUDIO
CKING
1-643-485-11
A

SW-513 — A SIDE —
1-643-485-11 (1)
SVO-9620


SONY
SW-513
MADE IN JAPAN
A
C
D
S152
S151
HIFI
NORMAL
S153
AUDIO
RACKING
RV101
CN165
CN166
CN156
CN152
CN155
R154
R155
R156
R166
D151

SW-513 — B SIDE —
1-643-485-11 (1)
SVO-9620

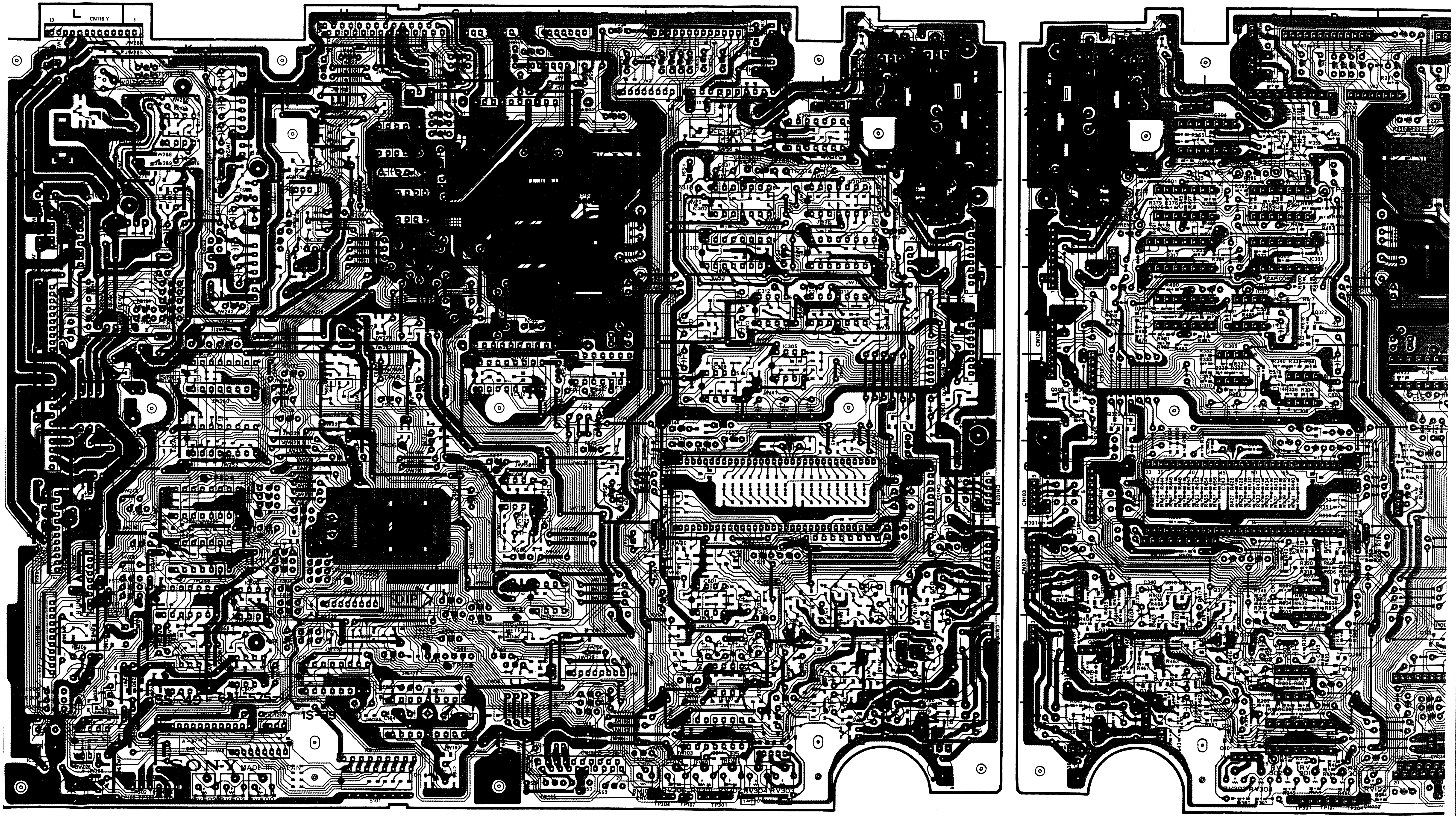

AUDIO SELECTOR
IC152 TC14052BFHB P1 (1/2)
IC152 (2/2)
IC153 TC14052BFHB P1 (1/2)
IC153 (2/2)
LAU/HIFI OUTPUT AMP
POWER CONTROL
IC154 RC4560M-T1 (1/2)
IC156 RC4560M-T1 (1/2)
IC155 RC5532M (1/2)
IC156 (2/2)
IC154 (2/2)
IC155 (2/2)
IC151 RC5532M (1/2)
IC151 (2/2)
MIC AMP
RV151: AUDIO LEVEL CH-1 NORM
RV153: AUDIO LEVEL CH-1 HIFI
RV152: AUDIO LEVEL CH-2 NORM
RV154: AUDIO LEVEL CH-2 HIFI
RV101: TRACKING
S153
AUDIO
TRACKING
SELECT
S151
METER/MONITOR OUT
AFM
NORMAL
S152
MONITOR SELECT
CH-1
MIX
CH-2
CP-196, 506-4 | 155-1 | CH-1 LAU LINE (X) IN
CP-196, 506-3 | 155-2 | CH-1 LAU LINE (G) IN
CP-196, 501-4 | 154-1 | CH-1 HIFI LINE (X) IN
CP-196, 501-3 | 154-2 | CH-1 HIFI LINE (G) IN
HP, 652-3 | 156-5 | L:CH-1 MIC IN
CP-196, 506-2 | 155-3 | CH-2 LAU LINE (X) IN
HP, 652-5 | 156-3 | L:CH-2 MIC IN
CP-196, 506-1 | 155-4 | CH-2 LAU LINE (G) IN
HP, 652-4 | 156-4 | MIC GND
CP-196, 501-2 | 154-3 | CH-2 HIFI LINE (X) IN
CP-196, 501-1 | 154-4 | CH-2 HIFI LINE (G) IN
HP, 652-1 | 156-7 | CH-1 MIC IN (X)
HP, 652-2 | 156-6 | CH-1 MIC IN (G)
HP, 652-6 | 156-2 | CH-2 MIC IN (X)
HP, 652-7 | 156-1 | CH-2 MIC IN (G)
REG +12V IN | 153-1 | AU (1/2), 309-6
GND | 153-2 | AU (1/2), 309-5
CH-1 LAU LINE OUT (X) | 153-6 | AU (1/2), 309-1
CH-1 LAU LINE OUT (G) | 153-5 | AU (1/2), 309-2
CH-1 HIFI LINE OUT (X) | 152-2 | AU (1/2), 305-3
CH-1 HIFI LINE OUT (G) | 152-1 | AU (1/2), 305-4
AU INPUT SELECT (A) IN | 157-1 | SW-514, 604-2
AU INPUT SELECT (B) IN | 157-2 | SW-514, 604-1
CH-2 LAU LINE OUT (X) | 153-4 | AU (1/2), 309-3
CH-2 METER IN | 165-1 | MT, 163-3
CH-2 METER SEL OUT | 165-2 | MT, 163-2
— | 166-1 | NC
TRACKING LEVEL IN | 166-3 | CR (1/3), 215-1
GND | 165-3 | MT, 163-1
GND | 166-2 | CR (1/3), 215-2
CH-2 LAU LINE OUT (G) | 153-3 | AU (1/2), 309-4
CH-2 HIFI LINE OUT (X) | 152-4 | AU (1/2), 305-1
TRACKING GND | 167-3 | KY, 159-1
TRACKING VR OUT | 167-2 | KY, 159-2
TRACKING +5V IN | 167-1 | KY, 159-3
CH-2 HIFI LINE OUT (G) | 152-3 | AU (1/2), 305-2
GND | 151-2 | AU (2/2), 307-3
METER L:AFNM/H:LAU OUT | 151-1 | AU (2/2), 307-4
MONITOR SELECT (B) OUT | 151-3 | AU (2/2), 307-2
MONITOR SELECT (A) OUT | 151-4 | AU (2/2), 307-1

MARK	CHANGED INFORMATION	SERIAL NO.
*1	R163, 165, 167, 169 8.2k → 6.8k	J;10011- UC;10021- EK;10001-

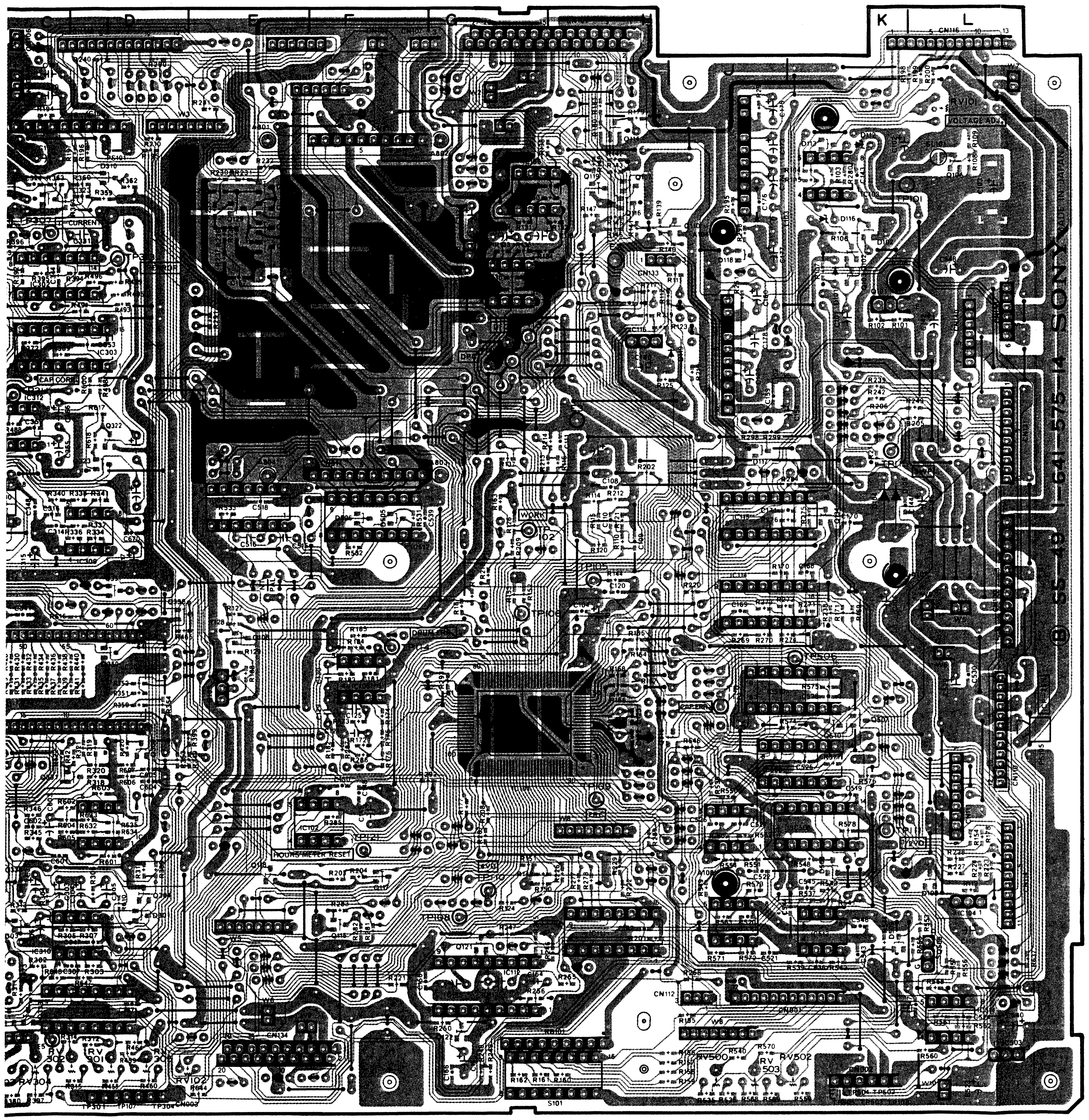
SW-513

1-643-485-11 (1)
SVO-9620

SS-49C ; SERVO & SYSTEM CONTROL


L
CN116 Y
13
1
SONY
MADE IN JAPAN
S101
IC305
IC312
CN103
CN102
R301
TP304
TP107
TP301
METER

SS-49C — A SIDE —
1-641-575-14 (1)
SVO-9620



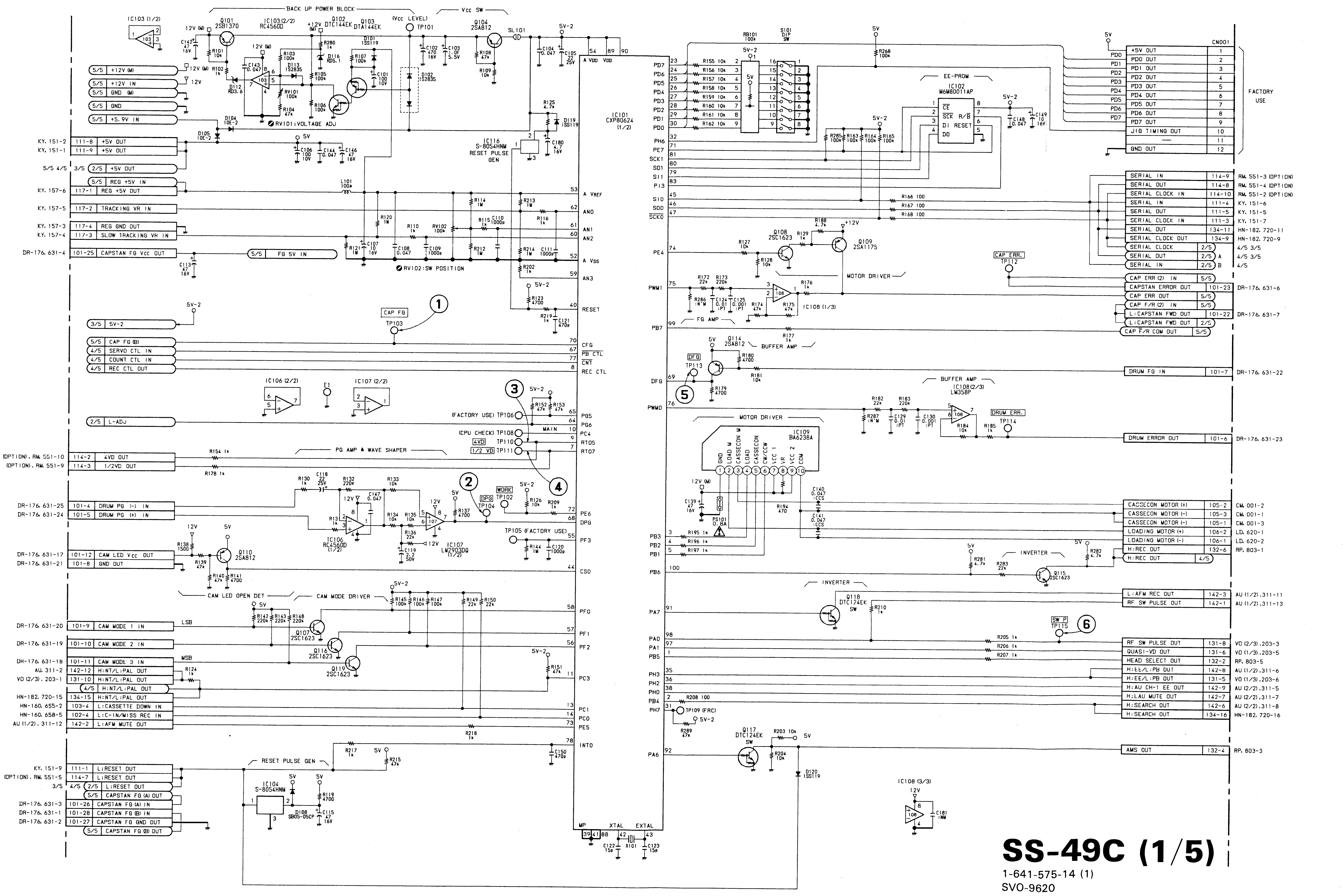
SS-49C — B SIDE —
1-641-575-14 (1)
SVO-9620

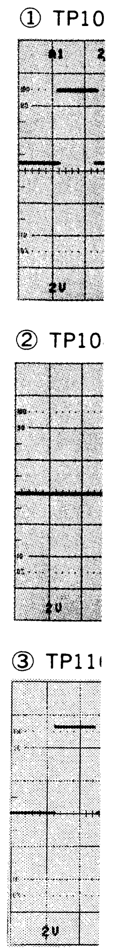
SS-49C (1-641-575-14)

CN1	K-9	D327	A-9	Q114	H-2 *	RV305	D-9
CN2	K-9	D328	A-9	Q115	F-8 *	RV500	J-9
E1		D329	A-9	Q116	H-2 *	RV502	K-9
TP103		D505	F-5 *	Q117	F-8 *	RV503	J-9
TP502		D506	F-5 *	Q118	E-8 *		
TP503		D508	K-8 *	Q119	H-2 *	S101	H-9
TP504		D509	K-8 *	Q120	E-2 *		
TP505				Q121	G-8 *	TP101	K-2
CN-3	D-9	E1	K-9	Q122	G-9 *	TP102	G-5
TP107		(CN2)		Q128	E-2 *	TP103	K-9
TP301		E2	H-3	Q129	E-2 *	(CN2)	
TP304		E3	H-4	Q130	E-2 *	TP104	G-3
CN100	L-5	E5	C-9	Q131	E-2 *	TP105	H-5
CN101	H-1			Q134	K-5 *	TP106	G-6
CN102	A-7	IC101	G-7 *	Q301	C-9 *	TP107	D-9
CN103	A-6	IC102	F-8	Q302	C-9 *	(CN3)	
CN105	C-1	IC103	K-2	Q303	C-8 *	TP108	G-8
CN106	C-1	IC104	L-8	Q304	D-8 *	TP109	H-7
CN107	F-1	IC106	G-2	Q305	A-5 *	TP110	G-8
CN108	F-1	IC107	H-3	Q306	C-2 *	TP111	L-7
CN110	L-7	IC108	F-6	Q307	B-1 *	TP112	J-6
CN111	L-7	IC109	D-1	Q308	A-1	TP113	G-3
CN112	J-9	IC111	H-8	Q309	B-1 *	TP114	F-6
CN114	L-8	IC112	G-8	Q310	B-1	TP115	K-4
CN116	L-1	IC113	G-9	Q311	C-8 *	TP121	F-7
CN117	F-1	IC114	J-5	Q312	B-8 *	TP301	D-9
CN118	A-8	IC115	K-5	Q313	A-8 *	(CN3)	
CN123	A-3	IC116	H-3	Q314	A-8	TP304	D-9
CN124	A-5	IC117	J-3	Q315	B-7 *	(CN3)	
CN130	L-3	IC118	J-2	Q316	B-7 *	TP305	B-3
CN131	L-4	IC301	B-3	Q317	C-7 *	TP306	B-2
CN132	E-1	IC302	D-3	Q318	A-7 *	TP307	C-2
CN133	J-3	IC303	D-3	Q319	A-7	TP308	B-3
CN134	E-9	IC304	C-2	Q320	A-5 *	TP311	C-4
CN140	L-3	IC305	C-4	Q321	B-5 *	TP313	D-3
CN142	D-1	IC306	C-6	Q322	D-4 *	TP314	C-2
CN151	A-5	IC307	P-1	Q323	D-4 *	TP502	K-9
CN153	P-1	IC308	P-1	Q331	C-7 *	(CN2)	
CN154	P-1	IC309	D-5	Q332	B-8 *	TP503	K-9
		IC310	D-8	Q333	C-9 *	(CN2)	
D101	K-3	IC311	B-4	Q334	C-8 *	TP504	K-9
D102	K-2 *	IC312	C-4	Q335	C-8 *	(CN2)	
D104	K-5	IC314	D-9	Q336	D-6 *	TP505	K-9
D105	K-4	IC315	B-3	Q337	B-8 *	(CN2)	
D108	L-8 *	IC503	L-9	Q338	A-8	TP506	J-6
D112	K-2	IC504	E-5	Q340	B-9 *		
D113	K-2 *	IC505	J-8	Q341	B-8 *	X101	H-6
D116	K-2	IC506	K-7	Q342	A-8	X301	C-5
D117	J-4 *	IC508	K-8	Q346	A-9		
D118	J-3 *	IC509	J-7	Q347	A-9 *		
D119	J-3	IC510	K-6	Q348	B-9		
D120	E-2 *	IC512	F-5	Q349	C-9 *		
D301	D-8 *	IC513	K-8	Q350	D-6		
D302	A-5	IC514	L-9	Q351	D-5 *		
D303	A-5 *	IC601	D-7	Q352	D-8 *		
D308	D-7 *			Q506	L-8		
D310	D-2 *	PS101	D-2	Q507	K-6 *		
D311	D-1	PS105	L-7 *	Q510	K-7 *		
D312	B-1	PS107	L-5 *	Q516	H-7 *		
D313	A-9	PS301	A-8				
D314	A-7			RB101	H-9		
D315	B-8 *	Q101	K-3	RB301	C-7		
D316	B-8 *	Q102	K-3 *				
D317	D-8	Q103	K-3 *	RV101	L-1		
D318	A-7	Q104	L-2 *	RV102	E-9		
D319	B-7 *	Q107	H-2 *	RV301	D-9		
D320	C-8	Q108	E-6 *	RV302	D-9		
D321	B-4 *	Q109	E-6	RV303	C-9		
D326	A-7	Q110	J-2 *	RV304	C-9		

* mark ; B SIDE mount

SS-49C (1/5); DRUM/CAPSTAN SERVO CONTROL VIDEO/AUDIO CONTROL SIGNAL GENERATOR

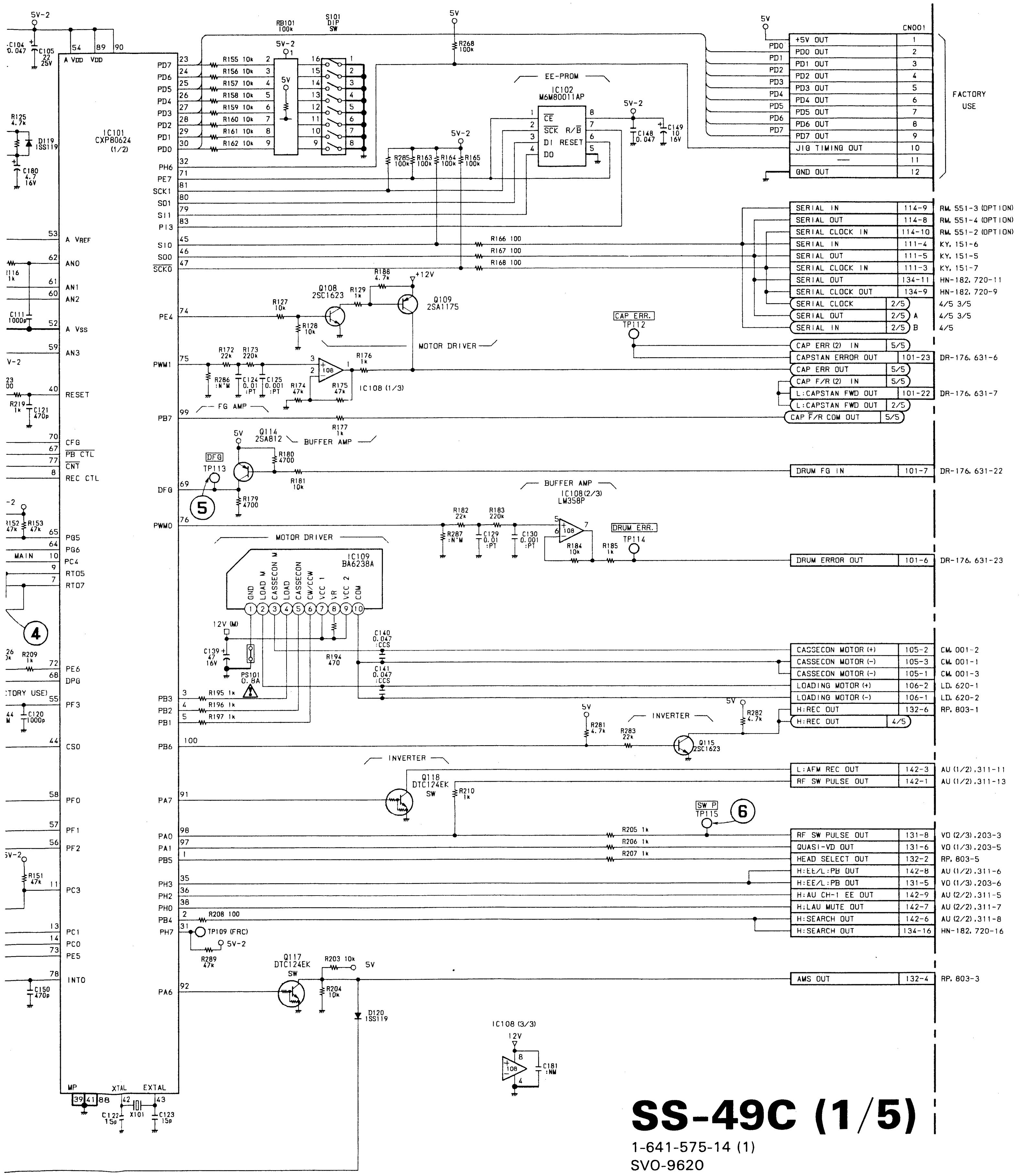

BACK UP POWER BLOCK
Vcc SW
(Vcc LEVEL)
IC101 CXP80624 (1/2)
IC102 M6M80011AP
EE-PROM
IC116 S-8054HNM RESET PULSE GEN
IC104 S-8054HNM
RESET PULSE GEN
IC106 RC4560D
IC107 LM2903DQ
IC108 LM358P
IC109 BA6238A
MOTOR DRIVER
BUFFER AMP
FG AMP
PG AMP & WAVE SHAPER
CAM LED OPEN DET
CAM MODE DRIVER
INVERTER
RV101: VOLTAGE ADJ
RV102: SW POSITION
CAP FG TP103
DFG TP113
DPG TP104
WORK TP102
CAP ERR. TP112
DRUM ERR. TP114
SW P TP115
TP105 (FACTORY USE)
(FACTORY USE) TP106
(CPU CHECK) TP108
4VD TP110
1/2 VD TP111
TP109 (FRC)
CN001
FACTORY USE
① ② ③ ④ ⑤ ⑥



SS-49C (1/5)

1-641-575-14 (1)
SVO-9620

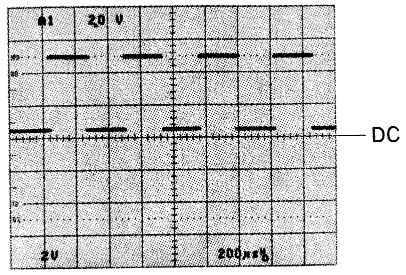
NOTE:
The ⚠-m
Replace c


IC101
CXP80624
(1/2)
IC102
M6M80011AP
EE-PROM
IC108 (1/3)
IC108(2/3)
LM358P
IC108 (3/3)
IC109
BA6238A
MOTOR DRIVER
FG AMP
BUFFER AMP
INVERTER
RB101 100k
S101 DIP SW
Q108 2SC1623
Q109 2SA1175
Q114 2SA812
Q115 2SC1623
Q117 DTC124EK SW
Q118 DTC124EK SW
D119 1SS119
D120 1SS119
PS101 0.8A
CAP ERR. TP112
DFG TP113
DRUM ERR. TP114
SW P TP115
TP109 (FRC)
CN001
FACTORY USE
+5V OUT 1
PD0 OUT 2
PD1 OUT 3
PD2 OUT 4
PD3 OUT 5
PD4 OUT 6
PD5 OUT 7
PD6 OUT 8
PD7 OUT 9
JIG TIMING OUT 10
— 11
GND OUT 12
SERIAL IN 114-9 RM. 551-3 (OPTION)
SERIAL OUT 114-8 RM. 551-4 (OPTION)
SERIAL CLOCK IN 114-10 RM. 551-2 (OPTION)
SERIAL IN 111-4 KY. 151-6
SERIAL OUT 111-5 KY. 151-5
SERIAL CLOCK IN 111-3 KY. 151-7
SERIAL OUT 134-11 HN-182. 720-11
SERIAL CLOCK OUT 134-9 HN-182. 720-9
SERIAL CLOCK 2/5 4/5 3/5
SERIAL OUT 2/5 A 4/5 3/5
SERIAL IN 2/5 B 4/5
CAP ERR (2) IN 5/5
CAPSTAN ERROR OUT 101-23 DR-176. 631-6
CAP ERR OUT 5/5
CAP F/R (2) IN 5/5
L:CAPSTAN FWD OUT 101-22 DR-176. 631-7
L:CAPSTAN FWD OUT 2/5
CAP F/R COM OUT 5/5
DRUM FG IN 101-7 DR-176. 631-22
DRUM ERROR OUT 101-6 DR-176. 631-23
CASSECON MOTOR (+) 105-2 CM. 001-2
CASSECON MOTOR (-) 105-3 CM. 001-1
CASSECON MOTOR (-) 105-1 CM. 001-3
LOADING MOTOR (+) 106-2 LD. 620-1
LOADING MOTOR (-) 106-1 LD. 620-2
H:REC OUT 132-6 RP. 803-1
H:REC OUT 4/5
L:AFM REC OUT 142-3 AU (1/2),311-11
RF SW PULSE OUT 142-1 AU (1/2),311-13
RF SW PULSE OUT 131-8 VD (2/3),203-3
QUASI-VD OUT 131-6 VD (1/3),203-5
HEAD SELECT OUT 132-2 RP. 803-5
H:EE/L:PB OUT 142-8 AU (1/2),311-6
H:EE/L:PB OUT 131-5 VD (1/3),203-6
H:AU CH-1 EE OUT 142-9 AU (2/2),311-5
H;LAU MUTE OUT 142-7 AU (2/2),311-7
H:SEARCH OUT 142-6 AU (2/2),311-8
H:SEARCH OUT 134-16 HN-182. 720-16
AMS OUT 132-4 RP. 803-3
A VREF
AN0
AN1
AN2
A VSS
AN3
RESET
CFG
PB CTL
CNT
REC CTL
PG5
PG6
PC4
RT05
RT07
PE6
DPG
PF3
CS0
PF0
PF1
PF2
PC3
PC1
PC0
PE5
INT0
PD7
PD6
PD5
PD4
PD3
PD2
PD1
PD0
PH6
PE7
SCK1
SO1
SI1
PI3
SI0
SO0
SCK0
PE4
PWM1
PB7
DFG
PWM0
PB3
PB2
PB1
PB6
PA7
PA0
PA1
PB5
PH3
PH2
PH0
PB4
PH7
PA6
MP
XTAL
EXTAL
X101
5V-2
5V
+12V
12V (M)
④
⑤
⑥

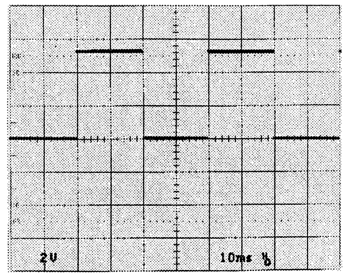
SS-49C (1/5)

1-641-575-14 (1)
SVO-9620

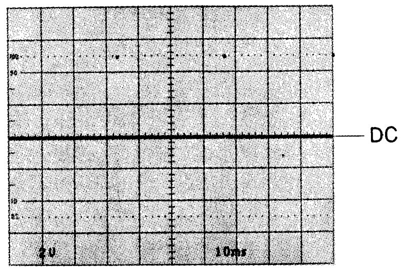
① TP103 (K-9) PB mode



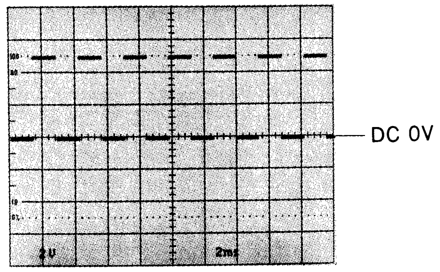
④ TP111 (L-7) PB mode



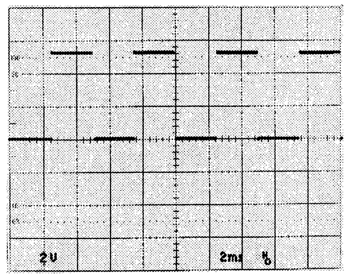
② TP104 (G-3) PB mode



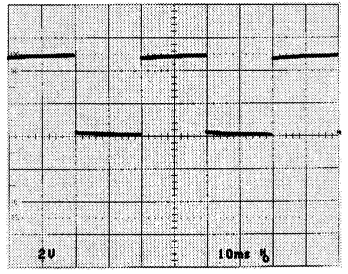
⑤ TP113 (G-3) PB mode



③ TP110 (G-8) PB mode



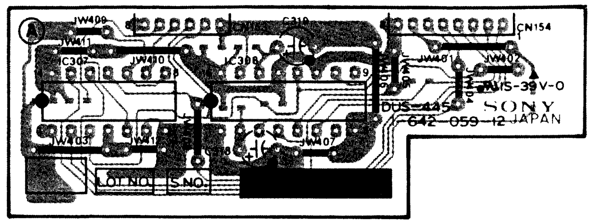
⑥ TP115 (K-4) PB mode



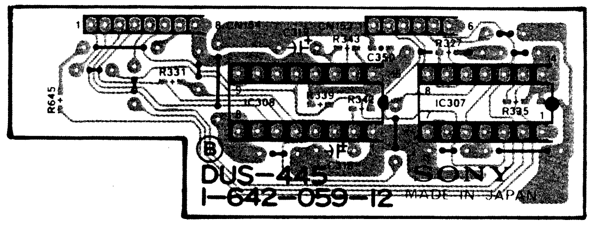
Measurement Condition
PB mode: KRV-45HPS

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

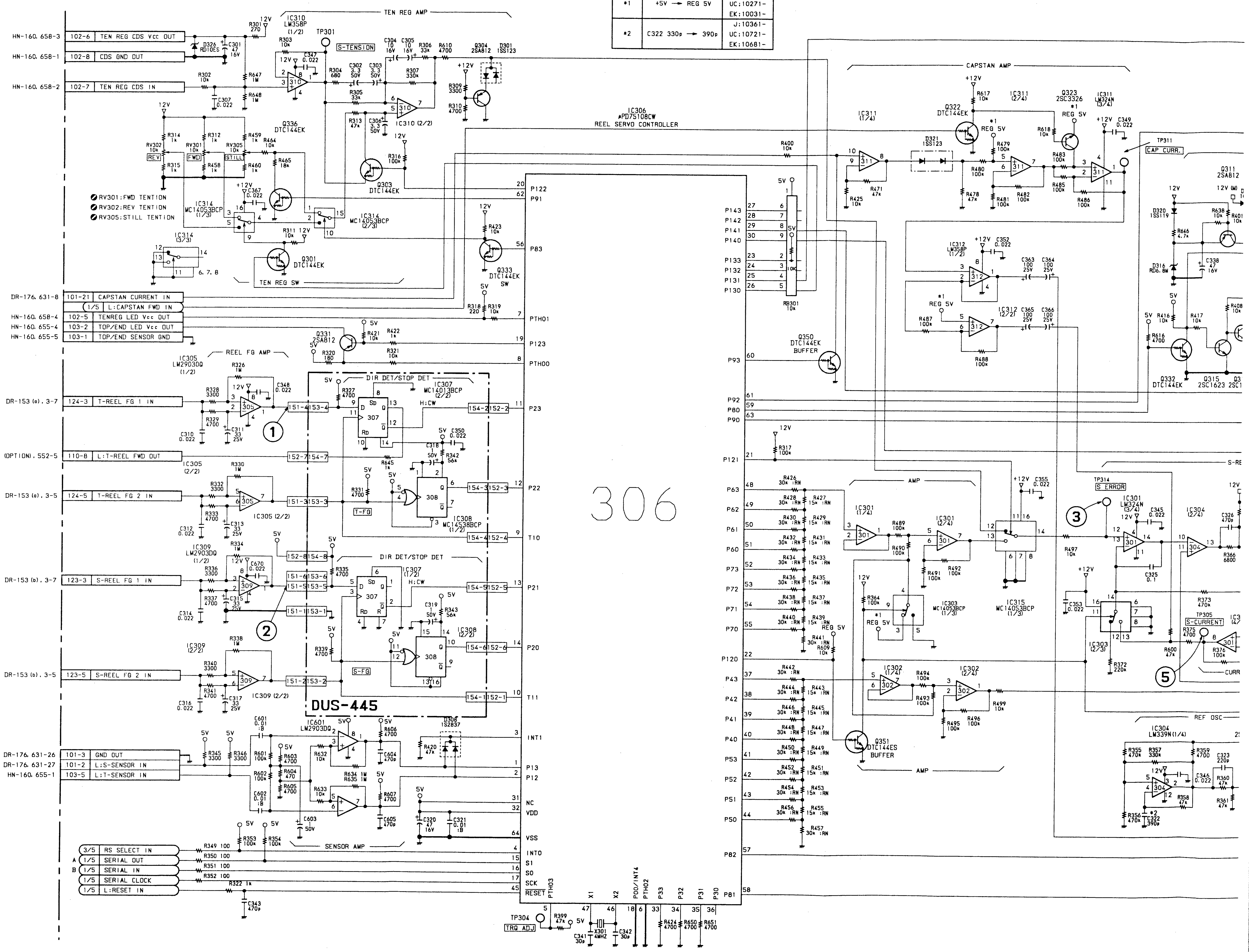
SS-49C (2/5) ; REEL SERVO CONTROL
DUS-445 ; DIRECTION AND STOP DETECT


IC307
IC308
CN154
DUS-445
642-059-12
SONY
JAPAN
T.END
S.NO

DUS-445 — A SIDE —
1-642-059-12 (1)
SVO-9620

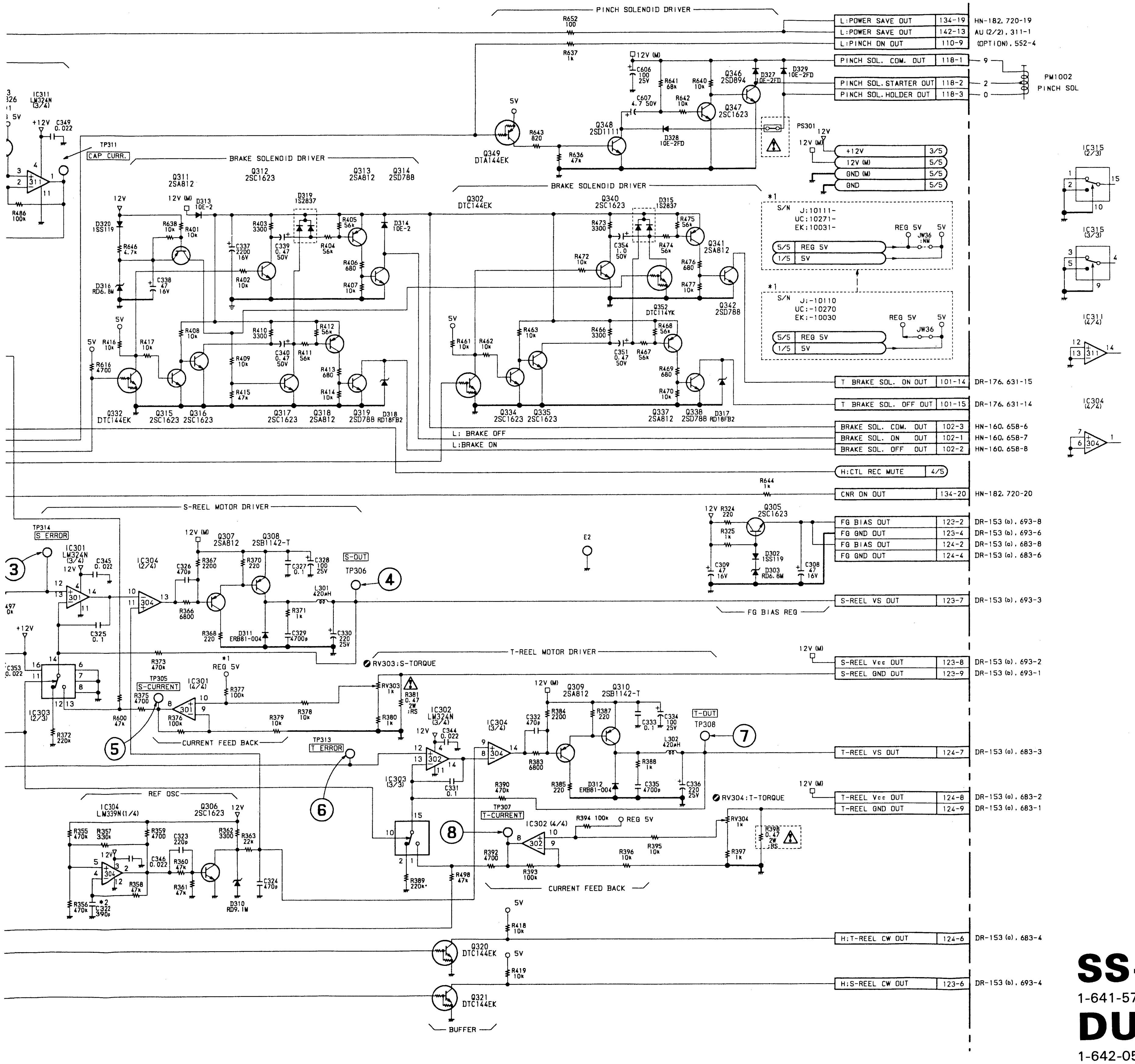

R331
R345
IC308
IC307
R645
DUS-445
1-642-059-12
SONY
MADE IN JAPAN

DUS-445 — B SIDE —
1-642-059-12 (1)
SVO-9620

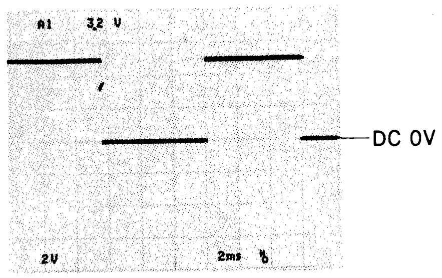

TEN REG AMP
IC310 LM358P (1/2)
TP301
S-TENSION
Q304 2SA812
D301 1SS123
IC310 (2/2)
Q336 DTC144EK
Q303 DTC144EK
IC314 MC14053BCP (1/3)
IC314 MC14053BCP (2/3)
IC314 (3/3)
Q301 DTC144EK
TEN REG SW
RV301:FWD TENTION
RV302:REV TENTION
RV305:STILL TENTION
REV
FWD
STILL
HN-160, 658-3 102-6 TEN REG CDS Vcc OUT
HN-160, 658-1 102-8 CDS GND OUT
HN-160, 658-2 102-7 TEN REG CDS IN
DR-176, 631-8 101-21 CAPSTAN CURRENT IN
1/5 L:CAPSTAN FWD IN
HN-160, 658-4 102-5 TENREG LED Vcc OUT
HN-160, 655-4 103-2 TOP/END LED Vcc OUT
HN-160, 655-5 103-1 TOP/END SENSOR GND
REEL FG AMP
IC305 LM2903DQ (1/2)
DR-153 (a), 3-7 124-3 T-REEL FG 1 IN
(OPTION), 552-5 110-8 L:T-REEL FWD OUT
IC305 (2/2)
DR-153 (a), 3-5 124-5 T-REEL FG 2 IN
IC309 LM2903DQ
DR-153 (b), 3-7 123-3 S-REEL FG 1 IN
IC309 (2/2)
DR-153 (b), 3-5 123-5 S-REEL FG 2 IN
DIR DET/STOP DET
IC307 MC14013BCP (2/2)
H:CW
IC308 MC14538BCP (1/2)
T-FG
IC307 (1/2)
IC308 (2/2)
S-FG
DUS-445
IC601 LM2903DQ
D308 1S2837
SENSOR AMP
DR-176, 631-26 101-3 GND OUT
DR-176, 631-27 101-2 L:S-SENSOR IN
HN-160, 655-1 103-5 L:T-SENSOR IN
3/5 RS SELECT IN
A 1/5 SERIAL OUT
B 1/5 SERIAL IN
1/5 SERIAL CLOCK
1/5 L:RESET IN
IC306 μPD75108CW REEL SERVO CONTROLLER
306
P122
P91
P83
PTH01
P123
PTH00
P23
P22
T10
P21
P20
T11
INT1
P13
P12
NC
VDD
VSS
INT0
SI
SO
SCK
RESET
PTH03
X1
X2
P00/INT4
PTH02
P33
P32
P31
P30
P81
P143
P142
P141
P140
P133
P132
P131
P130
P93
P92
P80
P90
P121
P63
P62
P61
P60
P73
P72
P71
P70
P120
P43
P42
P41
P40
P53
P52
P51
P50
P82
TP304
TRQ ADJ
X301 4MHZ
Q333 DTC144EK SW
Q331 2SA812
Q350 DTC144EK BUFFER
RB301
CAPSTAN AMP
IC311 (1/4)
D321 1SS123
Q322 DTC144EK
IC311 (2/4)
Q323 2SC3326
IC311 LM324N (3/4)
REG 5V
TP311
CAP CURR.
Q311 2SA812
IC312 LM358P (1/2)
IC312 (2/2)
D320 1SS119
D316 RD6.8E
Q332 DTC144EK
Q315 2SC1623
AMP
IC301 (1/4)
IC301 (2/4)
IC315 MC14053BCP (1/3)
IC303 MC14053BCP (1/3)
IC303 (2/3)
TP314
S ERROR
IC301 LM324N (3/4)
IC304 (2/4)
IC302 (1/4)
IC302 (2/4)
Q351 DTC144ES BUFFER
TP305
S-CURRENT
REF OSC
IC304 LM339N (1/4)
S-REEL
①
②
③
⑤

MARK	CHANGE INFORMATION	SERIAL NO.
*1	+5V → REG 5V	J:10111- UC:10271- EK:10031-
*2	C322 330p → 390p	J:10361- UC:10721- EK:10681-

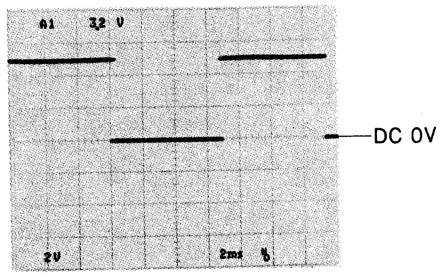
NOTE :
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


PINCH SOLENOID DRIVER
BRAKE SOLENOID DRIVER
S-REEL MOTOR DRIVER
T-REEL MOTOR DRIVER
FG BIAS REG
REF OSC
CURRENT FEED BACK
BUFFER
L:POWER SAVE OUT 134-19 HN-182, 720-19
L:POWER SAVE OUT 142-13 AU (2/2), 311-1
L:PINCH ON OUT 110-9 (OPTION), 552-4
PINCH SOL. COM. OUT 118-1
PINCH SOL. STARTER OUT 118-2
PINCH SOL. HOLDER OUT 118-3
PM1002 PINCH SOL
PS301
+12V 3/5
12V (M) 5/5
GND (M) 5/5
GND 5/5
J:10111- UC:10271- EK:10031-
J:-10110 UC:-10270 EK:-10030
REG 5V
5V
JW36 :NM
JW36
T BRAKE SOL. ON OUT 101-14 DR-176, 631-15
T BRAKE SOL. OFF OUT 101-15 DR-176, 631-14
BRAKE SOL. COM. OUT 102-3 HN-160, 658-6
BRAKE SOL. ON OUT 102-1 HN-160, 658-7
BRAKE SOL. OFF OUT 102-2 HN-160, 658-8
L: BRAKE OFF
L:BRAKE ON
H:CTL REC MUTE 4/5
CNR ON OUT 134-20 HN-182, 720-20
FG BIAS OUT 123-2 DR-153 (b), 693-8
FG GND OUT 123-4 DR-153 (b), 693-6
FG BIAS OUT 124-2 DR-153 (a), 683-8
FG GND OUT 124-4 DR-153 (a), 683-6
S-REEL VS OUT 123-7 DR-153 (b), 693-3
S-REEL Vcc OUT 123-8 DR-153 (b), 693-2
S-REEL GND OUT 123-9 DR-153 (b), 693-1
T-REEL VS OUT 124-7 DR-153 (a), 683-3
T-REEL Vcc OUT 124-8 DR-153 (a), 683-2
T-REEL GND OUT 124-9 DR-153 (a), 683-1
H:T-REEL CW OUT 124-6 DR-153 (a), 683-4
H:S-REEL CW OUT 123-6 DR-153 (b), 693-4
TP311 CAP CURR.
TP314 S ERROR
TP306 S-OUT
TP305 S-CURRENT
TP313 T ERROR
TP307 T-CURRENT
TP308 T-OUT
RV303:S-TORQUE
RV304:T-TORQUE
IC311 LM324N (3/4)
IC301 LM324N (3/4)
IC302 LM324N (3/4)
IC304 LM339N(1/4)
IC303 (2/3)
IC303 (3/3)
IC315 (2/3)
IC315 (3/3)
IC311 (4/4)
IC304 (4/4)
Q349 DTA144EK
Q348 2SD1111
Q346 2SD894
Q347 2SC1623
Q311 2SA812
Q312 2SC1623
Q313 2SA812
Q314 2SD788
Q302 DTC144EK
Q340 2SC1623
Q341 2SA812
Q342 2SD788
Q352 DTC114YK
Q332 DTC144EK
Q315 2SC1623
Q316 2SC1623
Q317 2SC1623
Q318 2SA812
Q319 2SD788
D318 RD18FB2
Q334 2SC1623
Q335 2SC1623
Q337 2SA812
Q338 2SD788
D317 RD18FB2
Q305 2SC1623
Q307 2SA812
Q308 2SB1142-T
Q309 2SA812
Q310 2SB1142-T
Q306 2SC1623
Q320 DTC144EK
Q321 DTC144EK
L301 420μH
L302 420μH
E2
③
④
⑤
⑥
⑦
⑧

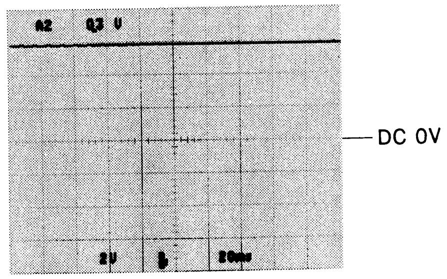
① CN151-4pin (A-5/DUS-445) PB mode



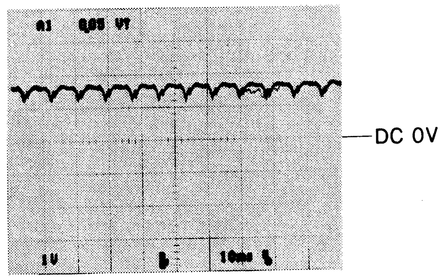
② CN151-5pin (A-5/DUS-445) PB mode



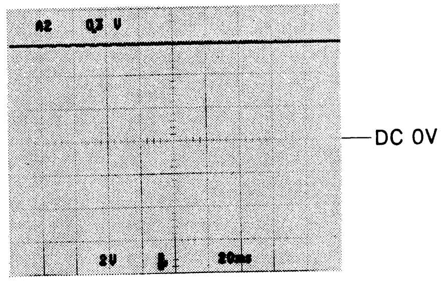
③ TP314 (C-2) PB mode



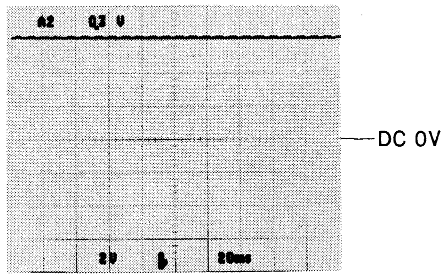
④ TP306 (B-2) PB mode



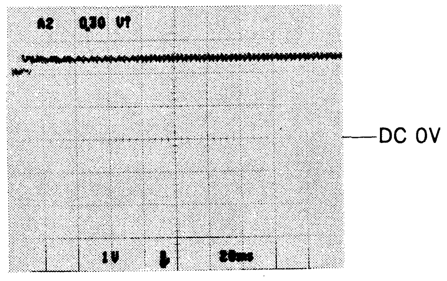
⑤ TP305 (B-3) PB mode



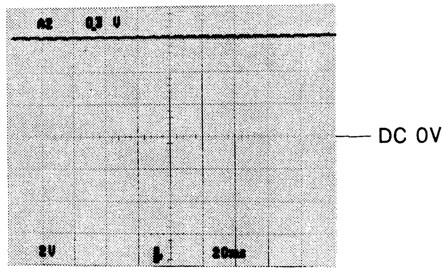
⑥ TP313 (D-3) PB mode



⑦ TP308 (B-3) PB mode



⑧ TP307 (C-2) PB mode



Measurement Condition
PB mode: KRV-45HPS

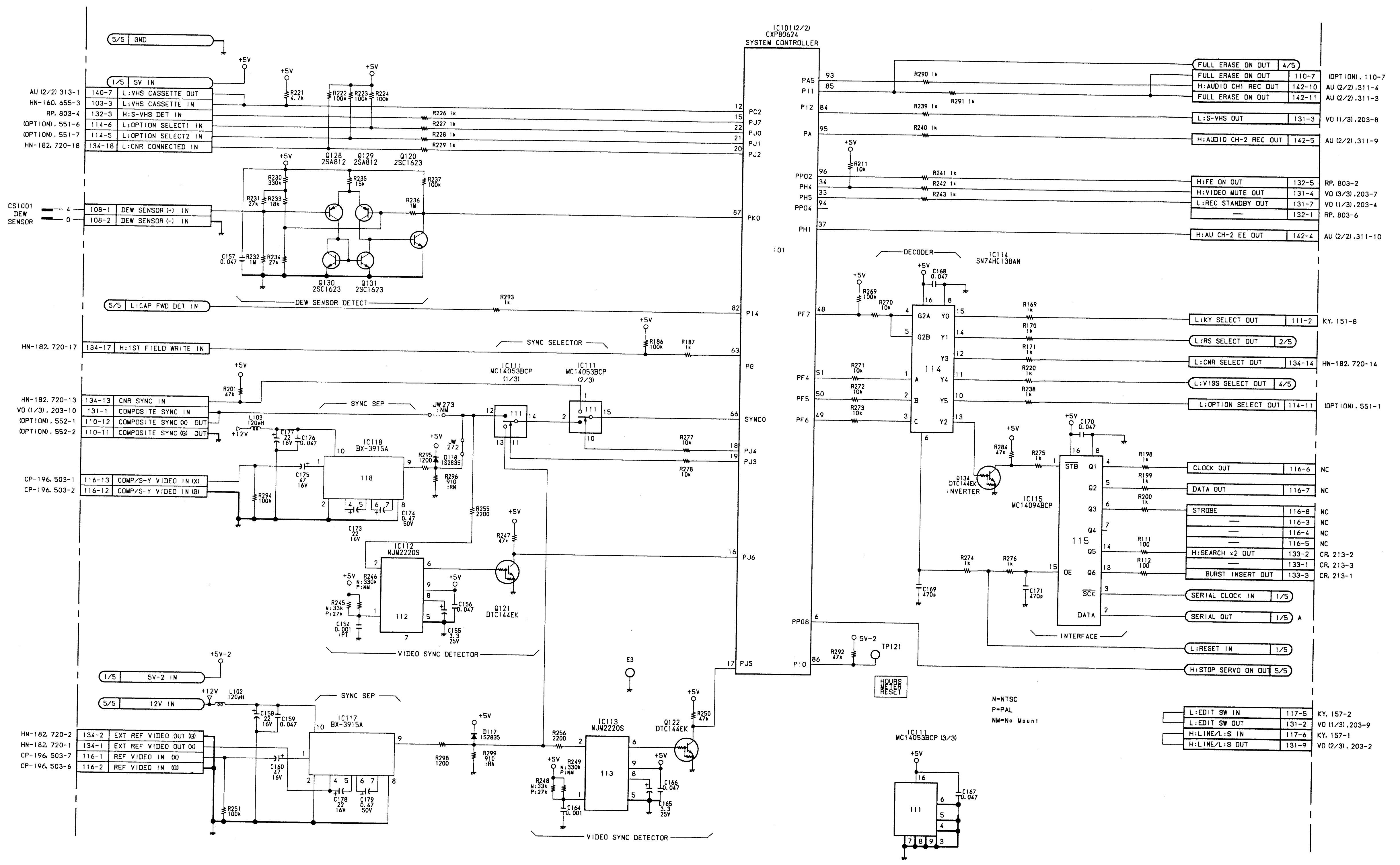
SS-49C (2/5)

1-641-575-14 (1)

DUS-445

1-642-059-12 (1)
SVO-9620

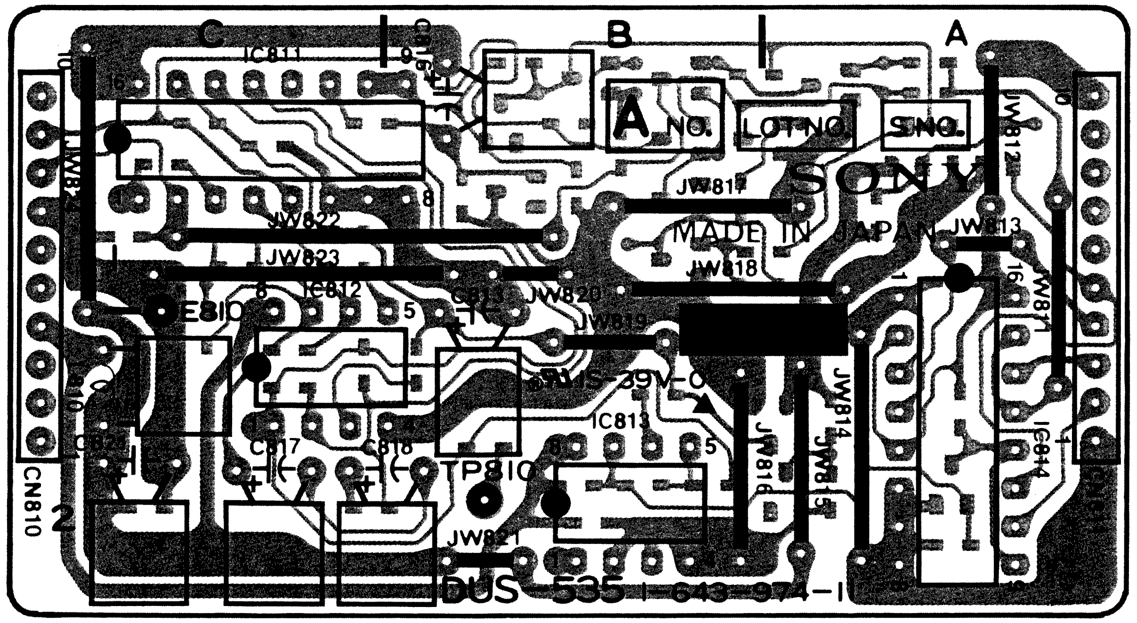
SS-49C (3/5); SYSTEM CONTROL


5/5 GND
1/5 5V IN
+5V
AU (2/2) 313-1 140-7 L:VHS CASSETTE OUT
HN-160, 655-3 103-3 L:VHS CASSETTE IN
RP, 803-4 132-3 H:S-VHS DET IN
(OPTION), 551-6 114-6 L:OPTION SELECT1 IN
(OPTION), 551-7 114-5 L:OPTION SELECT2 IN
HN-182, 720-18 134-18 L:CNR CONNECTED IN
R221 4.7k
R222 100k
R223 100k
R224 100k
R226 1k
R227 1k
R228 1k
R229 1k
Q128 2SA812
Q129 2SA812
Q120 2SC1623
CS1001 DEW SENSOR
108-1 DEW SENSOR (+) IN
108-2 DEW SENSOR (-) IN
Q130 2SC1623
Q131 2SC1623
DEW SENSOR DETECT
5/5 L:CAP FWD DET IN
R293 1k
HN-182, 720-17 134-17 H:1ST FIELD WRITE IN
SYNC SELECTOR
R186 100k
R187 1k
IC111 MC14053BCP (1/3)
IC111 MC14053BCP (2/3)
HN-182, 720-13 134-13 CNR SYNC IN
VO (1/3), 203-10 131-1 COMPOSITE SYNC IN
(OPTION), 552-1 110-12 COMPOSITE SYNC (X) OUT
(OPTION), 552-2 110-11 COMPOSITE SYNC (G) OUT
SYNC SEP
L103 120μH
IC118 BX-3915A
118
D118 1S2835
R277 10k
R278 10k
CP-196, 503-1 116-13 COMP/S-Y VIDEO IN (X)
CP-196, 503-2 116-12 COMP/S-Y VIDEO IN (G)
R294 100k
IC112 NJM2220S
112
Q121 DTC144EK
VIDEO SYNC DETECTOR
+5V-2
1/5 5V-2 IN
5/5 12V IN
L102 120μH
IC117 BX-3915A
D117 1S2835
HN-182, 720-2 134-2 EXT REF VIDEO OUT (G)
HN-182, 720-1 134-1 EXT REF VIDEO OUT (X)
CP-196, 503-7 116-1 REF VIDEO IN (X)
CP-196, 503-6 116-2 REF VIDEO IN (G)
R251 100k
IC113 NJM2220S
113
Q122 DTC144EK
E3
VIDEO SYNC DETECTOR
IC101 (2/2) CXP80624 SYSTEM CONTROLLER
101
PC2 PJ7 PJ0 PJ1 PJ2 PK0 PI4 PG SYNCO PJ4 PJ3 PJ6 PJ5
PA5 PI1 PI2 PA PP02 PH4 PH5 PP04 PH1 PF7 PF4 PF5 PF6 PP08 PI0
R290 1k
R291 1k
R239 1k
R240 1k
R211 10k
R241 1k
R242 1k
R243 1k
FULL ERASE ON OUT 4/5
FULL ERASE ON OUT 110-7 (OPTION), 110-7
H:AUDIO CH1 REC OUT 142-10 AU (2/2), 311-4
FULL ERASE ON OUT 142-11 AU (2/2), 311-3
L:S-VHS OUT 131-3 VO (1/3), 203-8
H:AUDIO CH-2 REC OUT 142-5 AU (2/2), 311-9
H:FE ON OUT 132-5 RP, 803-2
H:VIDEO MUTE OUT 131-4 VO (3/3), 203-7
L:REC STANDBY OUT 131-7 VO (1/3), 203-4
— 132-1 RP, 803-6
H:AU CH-2 EE OUT 142-4 AU (2/2), 311-10
DECODER
IC114 SN74HC138AN
114
G2A G2B A B C Y0 Y1 Y3 Y4 Y5 Y2
L:KY SELECT OUT 111-2 KY, 151-8
L:RS SELECT OUT 2/5
L:CNR SELECT OUT 134-14 HN-182, 720-14
L:VISS SELECT OUT 4/5
L:OPTION SELECT OUT 114-11 (OPTION), 551-1
Q134 DTC144EK INVERTER
IC115 MC14094BCP
115
STB Q1 Q2 Q3 Q4 Q5 Q6 OE SCK DATA
CLOCK OUT 116-6 NC
DATA OUT 116-7 NC
STROBE 116-8 NC
— 116-3 NC
— 116-4 NC
— 116-5 NC
H:SEARCH x2 OUT 133-2 CR, 213-2
— 133-1 CR, 213-3
BURST INSERT OUT 133-3 CR, 213-1
SERIAL CLOCK IN 1/5
SERIAL OUT 1/5 A
INTERFACE
L:RESET IN 1/5
H:STOP SERVO ON OUT 5/5
5V-2
TP121
HOURS METER RESET
N=NTSC
P=PAL
NM=No Mount
L:EDIT SW IN 117-5 KY, 157-2
L:EDIT SW OUT 131-2 VO (1/3), 203-9
H:LINE/L:S IN 117-6 KY, 157-1
H:LINE/L:S OUT 131-9 VO (2/3), 203-2
IC111 MC14053BCP (3/3)
111
1 2 3 4 5
A B C D E F G H

SS-49C (3/5)

1-641-575-14 (1)
SVO-9620

SS-49C (4/5); EDGE SEPARATOR
DUS-535; CTL HEAD AMP

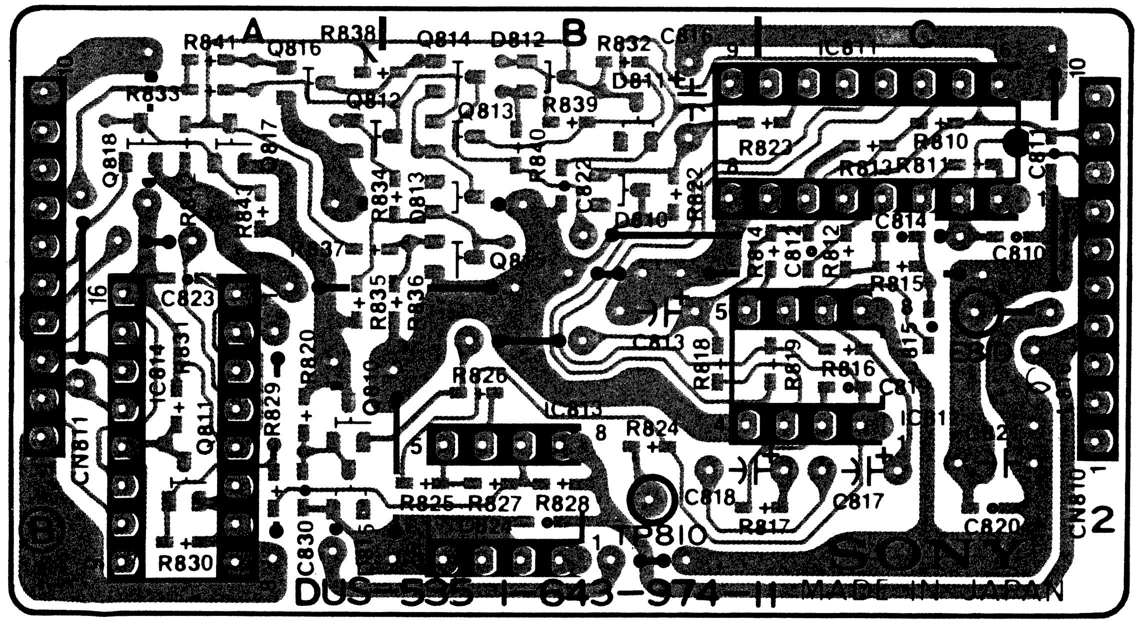

C
IC811
B
A
A NO.
LOT NO.
S NO.
SONY
MADE IN JAPAN
JW811
JW822
JW823
JW812
JW813
JW814
JW815
JW816
JW817
JW818
JW819
JW820
JW821
IC812
IC813
IC814
E810
C817
C818
TP810
VS-39V
CN810
CN811
DUS-535 1-643-974-11

DUS-535 — A SIDE —
1-643-974-11 (1)
SVO-9620

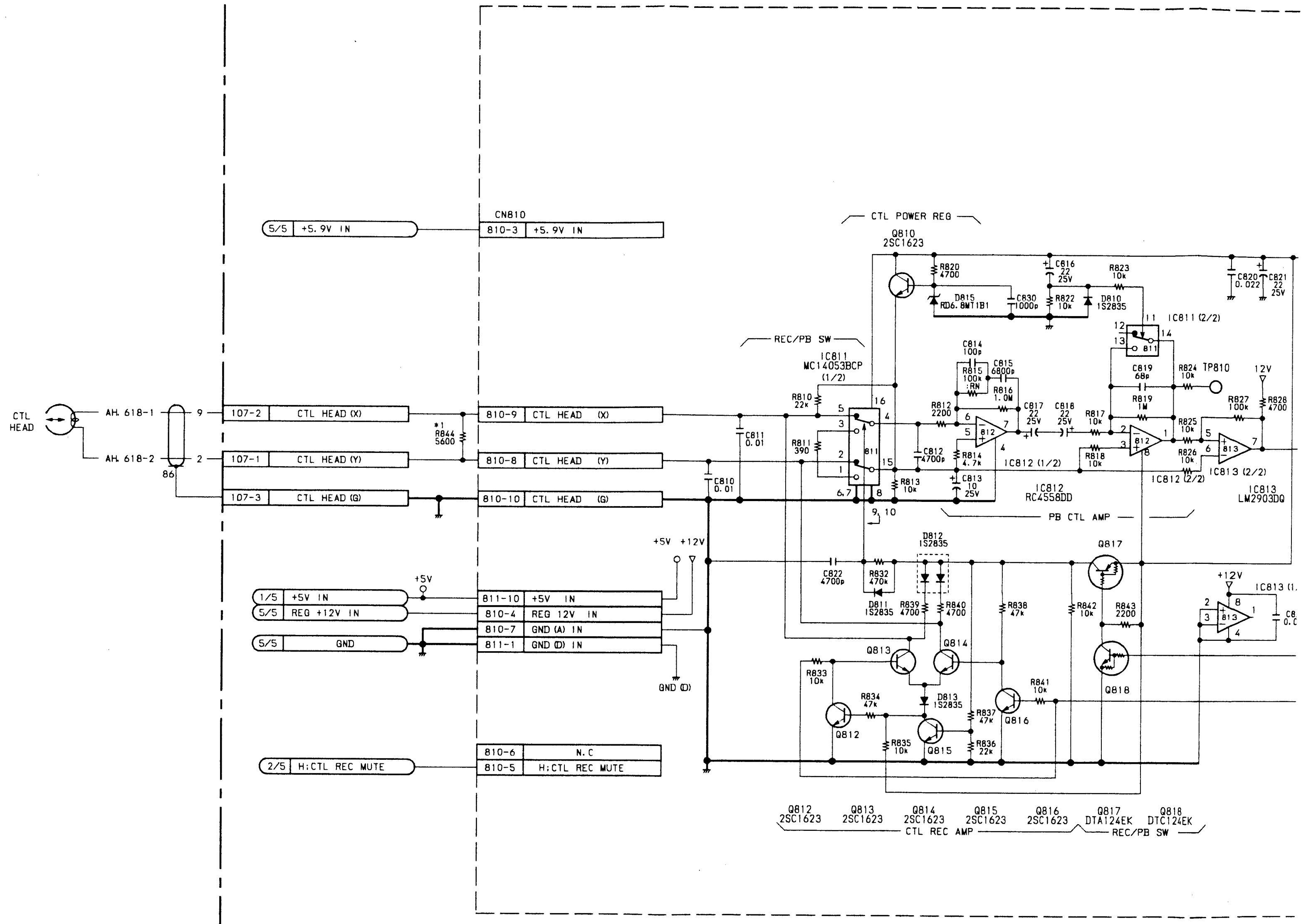
DUS-535 (1-643-974-11)

CN810	C-1
CN811	A-1
D810	B-1 *
D811	B-1 *
D812	B-1 *
D813	B-1 *
D815	A-2 *
E810	C-1
IC811	C-1
IC812	C-2
IC813	B-2
IC814	A-2
Q810	A-2 *
Q811	A-2 *
Q812	A-1 *
Q813	B-1 *
Q814	B-1 *
Q815	B-1 *
Q816	A-1 *
Q817	A-1 *
Q818	A-1 *
TP810	B-2

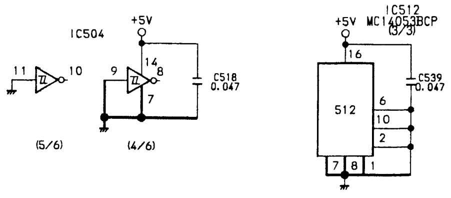
* mark; B SIDE mount


A
B
C
R841
Q816
R838
Q814
D812
R832
C816
R833
Q812
Q813
R839
D811
Q818
IC811
R823
R810
R813
R811
R840
R822
R834
D813
D810
C814
R814
C812
R812
C810
R815
C823
IC814
Q811
R831
R820
R829
R835
R836
R826
C813
R818
R819
R816
IC813
R824
R825
R827
R828
C818
C817
C820
C830
R830
R817
TP810
CN811
CN810
SONY
DUS-535 1-643-974-11 MADE IN JAPAN

DUS-535 — B SIDE —
1-643-974-11 (1)
SVO-9620


CTL HEAD
AH. 618-1
AH. 618-2
86
9
2
5/5 +5.9V IN
107-2 CTL HEAD (X)
107-1 CTL HEAD (Y)
107-3 CTL HEAD (G)
*1 R844 5600
CN810
810-3 +5.9V IN
810-9 CTL HEAD (X)
810-8 CTL HEAD (Y)
810-10 CTL HEAD (G)
C811 0.01
C810 0.01
1/5 +5V IN
5/5 REG +12V IN
5/5 GND
+5V
811-10 +5V IN
810-4 REG 12V IN
810-7 GND (A) IN
811-1 GND (D) IN
GND (D)
+5V +12V
2/5 H:CTL REC MUTE
810-6 N.C
810-5 H:CTL REC MUTE
CTL POWER REG
Q810 2SC1623
R820 4700
D815 RD6.8MT1B1
C830 1000p
C816 22 25V
R822 10k
D810 1S2835
R823 10k
C820 0.022
C821 22 25V
IC811 (2/2)
REC/PB SW
IC811 MC14053BCP (1/2)
R810 22k
R811 390
C814 100p
R815 100k :RN
C815 6800p
R816 1.0M
R812 2200
C812 4700p
R814 4.7k
R813 10k
C813 10 25V
IC812 (1/2)
C817 22 25V
C818 22 25V
R817 10k
R818 10k
C819 68p
R819 1M
R824 10k
TP810
12V
R827 100k
R828 4700
R825 10k
R826 10k
IC812 (2/2)
IC813 (2/2)
IC812 RC4558DD
IC813 LM2903DQ
PB CTL AMP
9, 10
D812 1S2835
C822 4700p
R832 470k
D811 1S2835
R839 4700
R840 4700
R838 47k
R842 10k
R843 2200
Q817
Q818
+12V
IC813 (1/
Q813
Q814
R833 10k
R834 47k
D813 1S2835
R841 10k
Q812
Q815
Q816
R835 10k
R837 47k
R836 22k
Q812 2SC1623
Q813 2SC1623
Q814 2SC1623
Q815 2SC1623
Q816 2SC1623
Q817 DTA124EK
Q818 DTC124EK
CTL REC AMP
REC/PB SW

MARK	CHANGE INFORMATION	SERIAL NO.
*1	R844 ADDED	J:10061- UC:10121- EK:10001-


IC504
+5V
11
10
9
14
8
7
C518 0.047
(5/6)
(4/6)
+5V
IC512 MC14053BCP (3/3)
16
512
6
10
2
7
8
1
C539 0.047

5 (1-643-974-11)

C-1
A-1

B-1 *
B-1 *
B-1 *
B-1 *
A-2 *

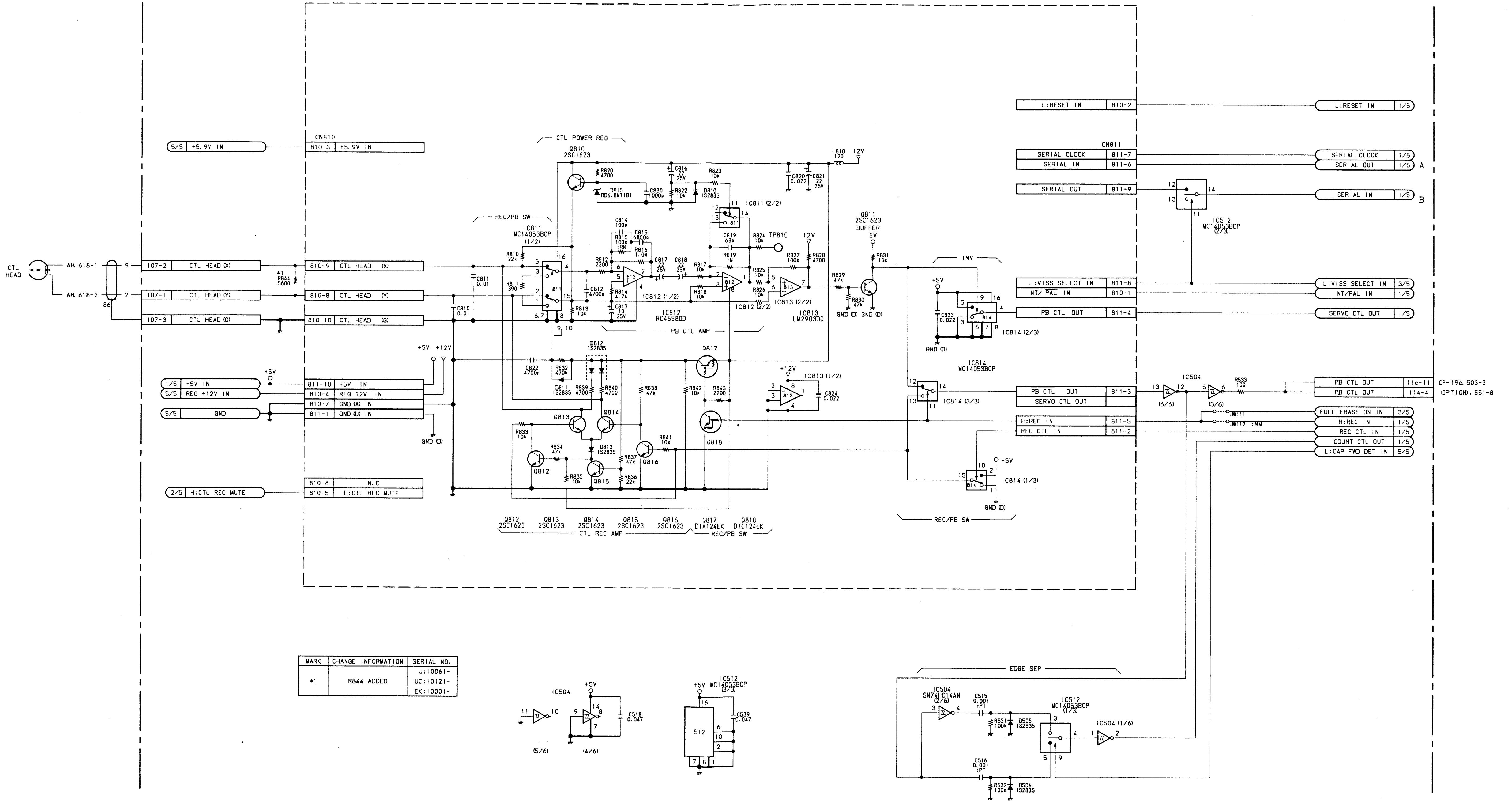
C-1

C-1
C-2
B-2
A-2

A-2 *
A-2 *
A-1 *
B-1 *
B-1 *
B-1 *
A-1 *
A-1 *
A-1 *

B-2

; B SIDE mount


CTL HEAD
AH. 618-1
AH. 618-2
107-2 CTL HEAD (X)
107-1 CTL HEAD (Y)
107-3 CTL HEAD (G)
CN810
5/5 +5.9V IN
810-3 +5.9V IN
810-9 CTL HEAD (X)
810-8 CTL HEAD (Y)
810-10 CTL HEAD (G)
1/5 +5V IN
5/5 REG +12V IN
5/5 GND
811-10 +5V IN
810-4 REG 12V IN
810-7 GND (A) IN
811-1 GND (D) IN
2/5 H:CTL REC MUTE
810-6 N.C
810-5 H:CTL REC MUTE
CTL POWER REG
Q810 2SC1623
REC/PB SW
IC811 MC14053BCP (1/2)
IC811 (2/2)
IC812 RC4558DD
IC812 (1/2)
IC812 (2/2)
IC813 LM2903DQ
IC813 (1/2)
IC813 (2/2)
PB CTL AMP
TP810
L810 120
12V
Q811 2SC1623 BUFFER
D812 1S2835
Q812 2SC1623
Q813 2SC1623
Q814 2SC1623
Q815 2SC1623
Q816 2SC1623
Q817 DTA124EK
Q818 DTC124EK
CTL REC AMP
REC/PB SW
L:RESET IN 810-2
CN811
SERIAL CLOCK 811-7
SERIAL IN 811-6
SERIAL OUT 811-9
IC512 MC14053BCP (2/3)
L:VISS SELECT IN 811-8
NT/PAL IN 810-1
PB CTL OUT 811-4
INV
IC814 (2/3)
IC814 MC14053BCP
IC814 (3/3)
IC814 (1/3)
PB CTL OUT 811-3
SERVO CTL OUT
H:REC IN 811-5
REC CTL IN 811-2
IC504
JW111
JW112 :NM
L:RESET IN 1/5
SERIAL CLOCK 1/5
SERIAL OUT 1/5
SERIAL IN 1/5
L:VISS SELECT IN 3/5
NT/PAL IN 1/5
SERVO CTL OUT 1/5
PB CTL OUT 116-11
PB CTL OUT 114-4
CP-196 S03-3 (OPTION), S51-8
FULL ERASE ON IN 3/5
H:REC IN 1/5
REC CTL IN 1/5
COUNT CTL OUT 1/5
L:CAP FWD DET IN 5/5
EDGE SEP
IC504 SN74HC14AN (2/6)
IC512 MC14053BCP (1/3)
IC504 (1/6)
D505 1S2835
D506 1S2835
IC504 (5/6)
IC504 (4/6)
IC512 MC14053BCP (3/3)
GND (D)

MARK	CHANGE INFORMATION	SERIAL NO.
*1	R844 ADDED	J:10061- UC:10121- EK:10001-

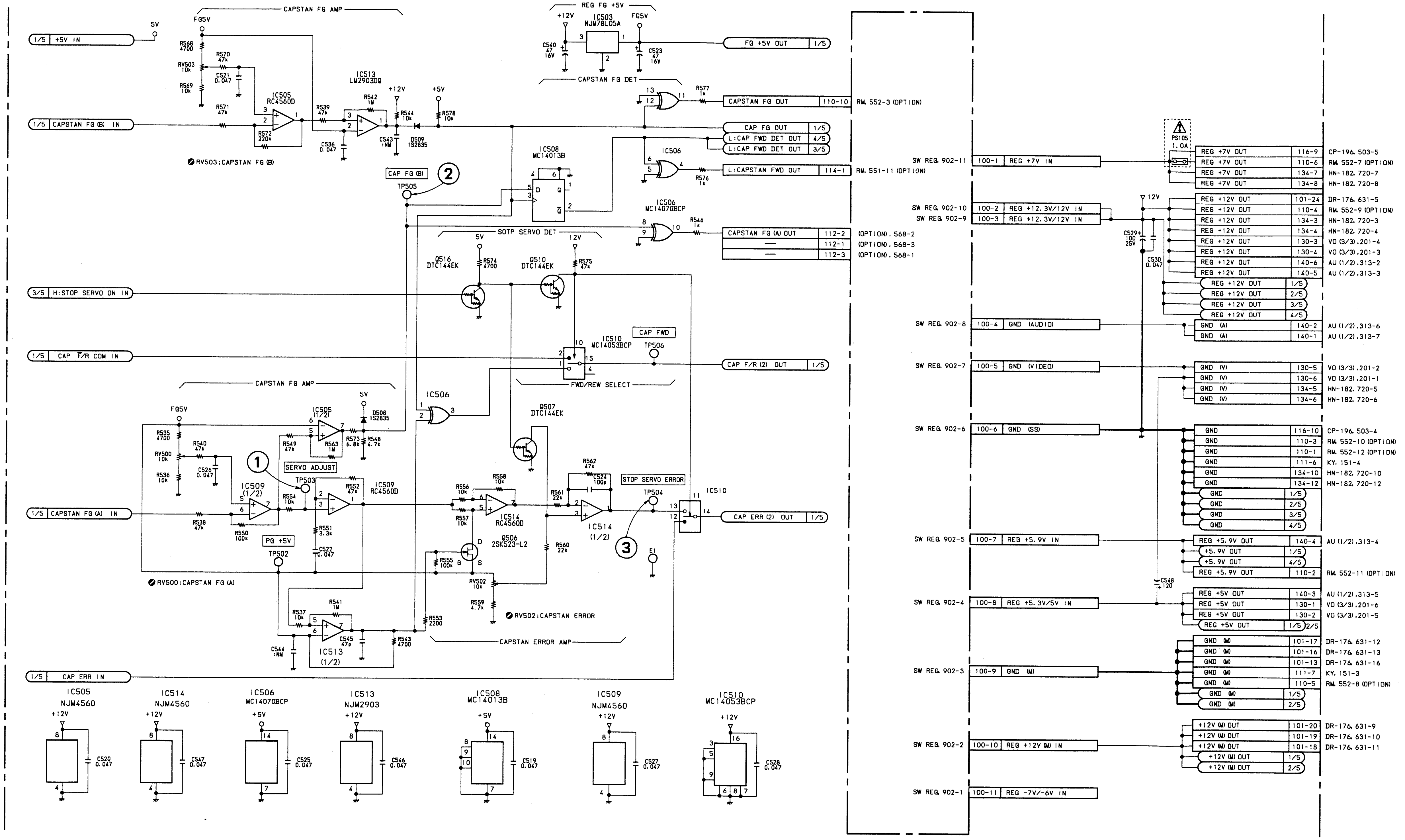
SS-49C (4/5)

1-641-575-14 (1)

DUS-535

1-643-974-11 (1)
SVO-9620

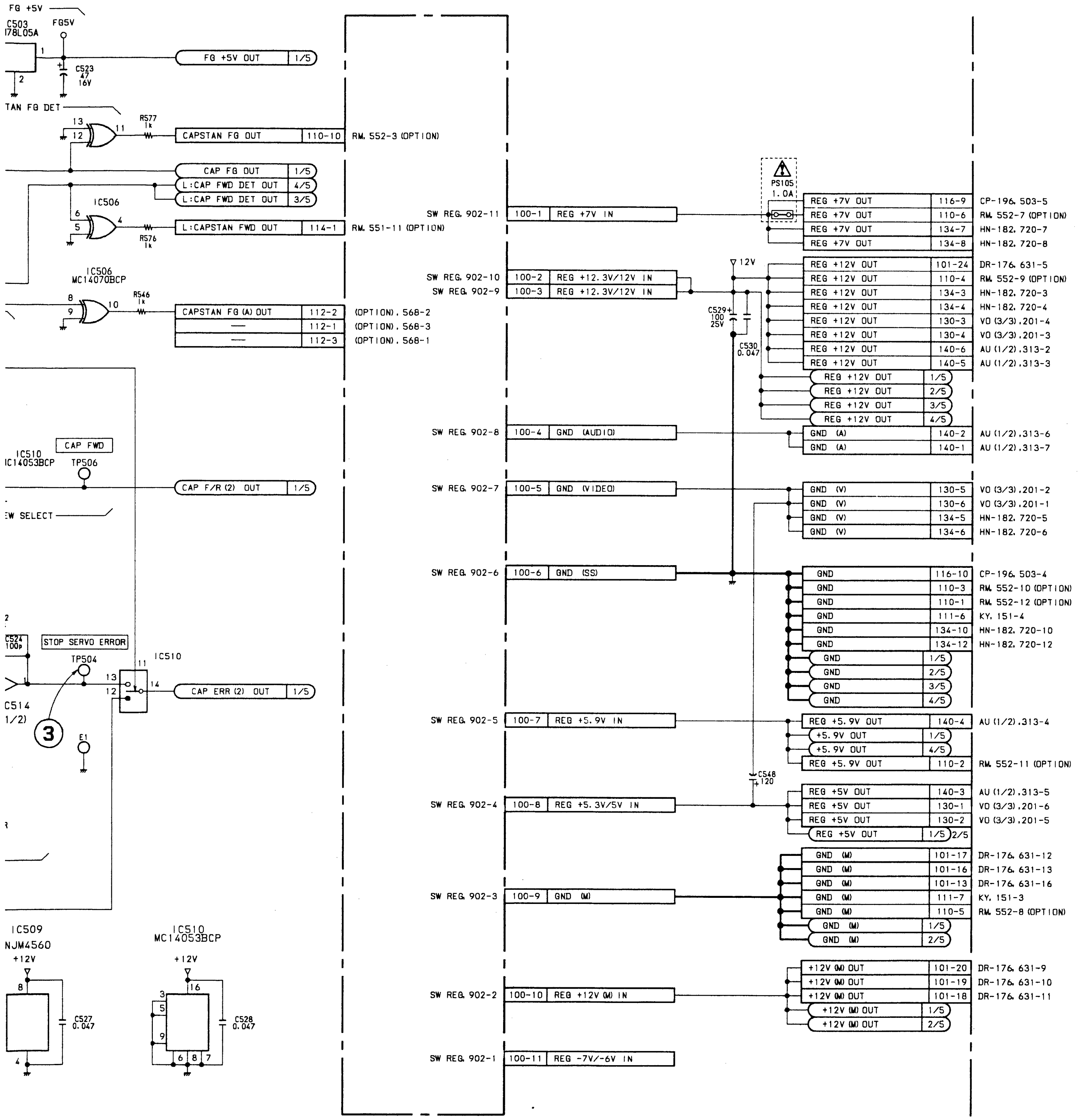
SS-49C (5/5); CAPSTAN FG AMP POWER BLOCK


CAPSTAN FG AMP
1/5 +5V IN
5V
FG5V
R568 4700
R570 47k
RV503 10k
C521 0.047
R569 10k
IC505 RC4560D
R571 47k
R572 220k
1/5 CAPSTAN FG (B) IN
R539 47k
IC513 LM2903DD
R542 1M
+12V
+5V
R544 10k
R578 10k
C536 0.047
C543 :NM
D509 1S2835
RV503:CAPSTAN FG (B)
CAP FG (B)
TP505
②
REG FG +5V
IC503 NJM78L05A
C540 47 16V
C523 47 16V
FG +5V OUT 1/5
CAPSTAN FG DET
R577 1k
CAPSTAN FG OUT 110-10
RM. 552-3 (OPTION)
CAP FG OUT 1/5
L:CAP FWD DET OUT 4/5
L:CAP FWD DET OUT 3/5
IC506
IC508 MC14013B
R576 1k
L:CAPSTAN FWD OUT 114-1
RM. 551-11 (OPTION)
IC506 MC14070BCP
R546 1k
CAPSTAN FG (A) OUT 112-2
112-1
112-3
(OPTION). 568-2
(OPTION). 568-3
(OPTION). 568-1
SOTP SERVO DET
Q516 DTC144EK
R574 4700
Q510 DTC144EK
R575 47k
3/5 H:STOP SERVO ON IN
IC510 MC14053BCP
CAP FWD
TP506
1/5 CAP F/R COM IN
CAP F/R (2) OUT 1/5
FWD/REW SELECT
CAPSTAN FG AMP
IC506
D508 1S2835
IC505 (1/2)
Q507 DTC144EK
FG5V
R535 4700
R540 47k
RV500 10k
C526 0.047
R536 10k
R549 47k
R563 1M
R573 6.8k
R548 4.7k
SERVO ADJUST
①
TP503
IC509 (1/2)
R552 47k
IC509 RC4560D
R554 10k
R558 10k
R556 10k
R562 47k
C524 100p
STOP SERVO ERROR
R561 22k
TP504
IC510
1/5 CAPSTAN FG (A) IN
R538 47k
R550 100k
R551 3.3k
R557 10k
IC514 RC4560D
IC514 (1/2)
CAP ERR (2) OUT 1/5
PG +5V
TP502
C522 0.047
Q506 2SK523-L2
R560 22k
③
E1
R555 100k
RV502 10k
R559 4.7k
RV500:CAPSTAN FG (A)
RV502:CAPSTAN ERROR
R537 10k
R541 1M
C545 47p
R553 2200
R543 4700
C544 :NM
IC513 (1/2)
CAPSTAN ERROR AMP
1/5 CAP ERR IN
IC505 NJM4560 +12V C520 0.047
IC514 NJM4560 +12V C547 0.047
IC506 MC14070BCP +5V C525 0.047
IC513 NJM2903 +12V C546 0.047
IC508 MC14013B +5V C519 0.047
IC509 NJM4560 +12V C527 0.047
IC510 MC14053BCP +12V C528 0.047
PS105 1.0A
SW REG. 902-11 100-1 REG +7V IN
REG +7V OUT 116-9 CP-196. 503-5
REG +7V OUT 110-6 RM. 552-7 (OPTION)
REG +7V OUT 134-7 HN-182. 720-7
REG +7V OUT 134-8 HN-182. 720-8
12V
SW REG. 902-10 100-2 REG +12.3V/12V IN
SW REG. 902-9 100-3 REG +12.3V/12V IN
C529 100 25V
C530 0.047
REG +12V OUT 101-24 DR-176. 631-5
REG +12V OUT 110-4 RM. 552-9 (OPTION)
REG +12V OUT 134-3 HN-182. 720-3
REG +12V OUT 134-4 HN-182. 720-4
REG +12V OUT 130-3 VO (3/3).201-4
REG +12V OUT 130-4 VO (3/3).201-3
REG +12V OUT 140-6 AU (1/2).313-2
REG +12V OUT 140-5 AU (1/2).313-3
REG +12V OUT 1/5
REG +12V OUT 2/5
REG +12V OUT 3/5
REG +12V OUT 4/5
SW REG. 902-8 100-4 GND (AUDIO)
GND (A) 140-2 AU (1/2).313-6
GND (A) 140-1 AU (1/2).313-7
SW REG. 902-7 100-5 GND (VIDEO)
GND (V) 130-5 VO (3/3).201-2
GND (V) 130-6 VO (3/3).201-1
GND (V) 134-5 HN-182. 720-5
GND (V) 134-6 HN-182. 720-6
SW REG. 902-6 100-6 GND (SS)
GND 116-10 CP-196. 503-4
GND 110-3 RM. 552-10 (OPTION)
GND 110-1 RM. 552-12 (OPTION)
GND 111-6 KY. 151-4
GND 134-10 HN-182. 720-10
GND 134-12 HN-182. 720-12
GND 1/5
GND 2/5
GND 3/5
GND 4/5
SW REG. 902-5 100-7 REG +5.9V IN
REG +5.9V OUT 140-4 AU (1/2).313-4
+5.9V OUT 1/5
+5.9V OUT 4/5
REG +5.9V OUT 110-2 RM. 552-11 (OPTION)
C548 120
SW REG. 902-4 100-8 REG +5.3V/5V IN
REG +5V OUT 140-3 AU (1/2).313-5
REG +5V OUT 130-1 VO (3/3).201-6
REG +5V OUT 130-2 VO (3/3).201-5
REG +5V OUT 1/5 2/5
SW REG. 902-3 100-9 GND (M)
GND (M) 101-17 DR-176. 631-12
GND (M) 101-16 DR-176. 631-13
GND (M) 101-13 DR-176. 631-16
GND (M) 111-7 KY. 151-3
GND (M) 110-5 RM. 552-8 (OPTION)
GND (M) 1/5
GND (M) 2/5
SW REG. 902-2 100-10 REG +12V (M) IN
+12V (M) OUT 101-20 DR-176. 631-9
+12V (M) OUT 101-19 DR-176. 631-10
+12V (M) OUT 101-18 DR-176. 631-11
+12V (M) OUT 1/5
+12V (M) OUT 2/5
SW REG. 902-1 100-11 REG -7V/-6V IN

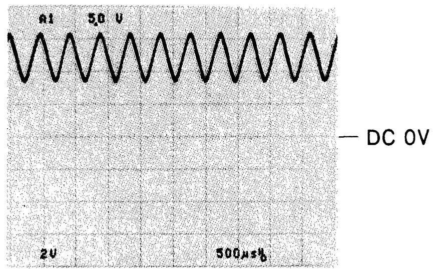
SS-49C (5/5)

1-641-575-14 (1)
SVO-9620

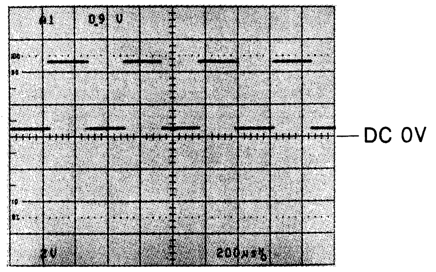
NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


FG +5V
IC503
78L05A
FG5V
C523 47 16V
FG +5V OUT 1/5
CAPSTAN FG DET
R577 1k
CAPSTAN FG OUT 110-10 RM. 552-3 (OPTION)
CAP FG OUT 1/5
L:CAP FWD DET OUT 4/5
L:CAP FWD DET OUT 3/5
IC506
L:CAPSTAN FWD OUT 114-1 RM. 551-11 (OPTION)
R576 1k
IC506 MC14070BCP
R546 1k
CAPSTAN FG (A) OUT 112-2 (OPTION). 568-2
112-1 (OPTION). 568-3
112-3 (OPTION). 568-1
CAP FWD
IC510 IC14053BCP
TP506
CAP F/R (2) OUT 1/5
VIEW SELECT
STOP SERVO ERROR
TP504
C524 100p
IC510
CAP ERR (2) OUT 1/5
C514 (1/2)
③
E1
IC509 NJM4560
+12V
C527 0.047
IC510 MC14053BCP
+12V
C528 0.047
SW REG. 902-11 100-1 REG +7V IN
PS105 1.0A
REG +7V OUT 116-9 CP-196. 503-5
REG +7V OUT 110-6 RM. 552-7 (OPTION)
REG +7V OUT 134-7 HN-182. 720-7
REG +7V OUT 134-8 HN-182. 720-8
12V
SW REG. 902-10 100-2 REG +12.3V/12V IN
SW REG. 902-9 100-3 REG +12.3V/12V IN
C529 100 25V
C530 0.047
REG +12V OUT 101-24 DR-176. 631-5
REG +12V OUT 110-4 RM. 552-9 (OPTION)
REG +12V OUT 134-3 HN-182. 720-3
REG +12V OUT 134-4 HN-182. 720-4
REG +12V OUT 130-3 VO (3/3). 201-4
REG +12V OUT 130-4 VO (3/3). 201-3
REG +12V OUT 140-6 AU (1/2). 313-2
REG +12V OUT 140-5 AU (1/2). 313-3
REG +12V OUT 1/5
REG +12V OUT 2/5
REG +12V OUT 3/5
REG +12V OUT 4/5
SW REG. 902-8 100-4 GND (AUDIO)
GND (A) 140-2 AU (1/2). 313-6
GND (A) 140-1 AU (1/2). 313-7
SW REG. 902-7 100-5 GND (VIDEO)
GND (V) 130-5 VO (3/3). 201-2
GND (V) 130-6 VO (3/3). 201-1
GND (V) 134-5 HN-182. 720-5
GND (V) 134-6 HN-182. 720-6
SW REG. 902-6 100-6 GND (SS)
GND 116-10 CP-196. 503-4
GND 110-3 RM. 552-10 (OPTION)
GND 110-1 RM. 552-12 (OPTION)
GND 111-6 KY. 151-4
GND 134-10 HN-182. 720-10
GND 134-12 HN-182. 720-12
GND 1/5
GND 2/5
GND 3/5
GND 4/5
SW REG. 902-5 100-7 REG +5.9V IN
REG +5.9V OUT 140-4 AU (1/2). 313-4
+5.9V OUT 1/5
+5.9V OUT 4/5
REG +5.9V OUT 110-2 RM. 552-11 (OPTION)
C548 120
SW REG. 902-4 100-8 REG +5.3V/5V IN
REG +5V OUT 140-3 AU (1/2). 313-5
REG +5V OUT 130-1 VO (3/3). 201-6
REG +5V OUT 130-2 VO (3/3). 201-5
REG +5V OUT 1/5 2/5
SW REG. 902-3 100-9 GND (M)
GND (M) 101-17 DR-176. 631-12
GND (M) 101-16 DR-176. 631-13
GND (M) 101-13 DR-176. 631-16
GND (M) 111-7 KY. 151-3
GND (M) 110-5 RM. 552-8 (OPTION)
GND (M) 1/5
GND (M) 2/5
SW REG. 902-2 100-10 REG +12V (M) IN
+12V (M) OUT 101-20 DR-176. 631-9
+12V (M) OUT 101-19 DR-176. 631-10
+12V (M) OUT 101-18 DR-176. 631-11
+12V (M) OUT 1/5
+12V (M) OUT 2/5
SW REG. 902-1 100-11 REG -7V/-6V IN

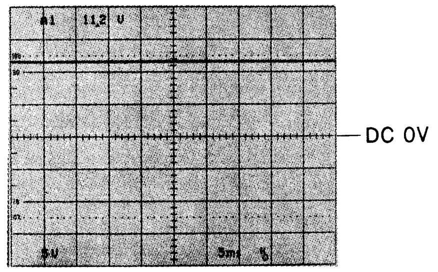
① TP503 (K-9) PB mode



② TP505 (K-9) PB mode



③ TP504 (K-9) PB mode

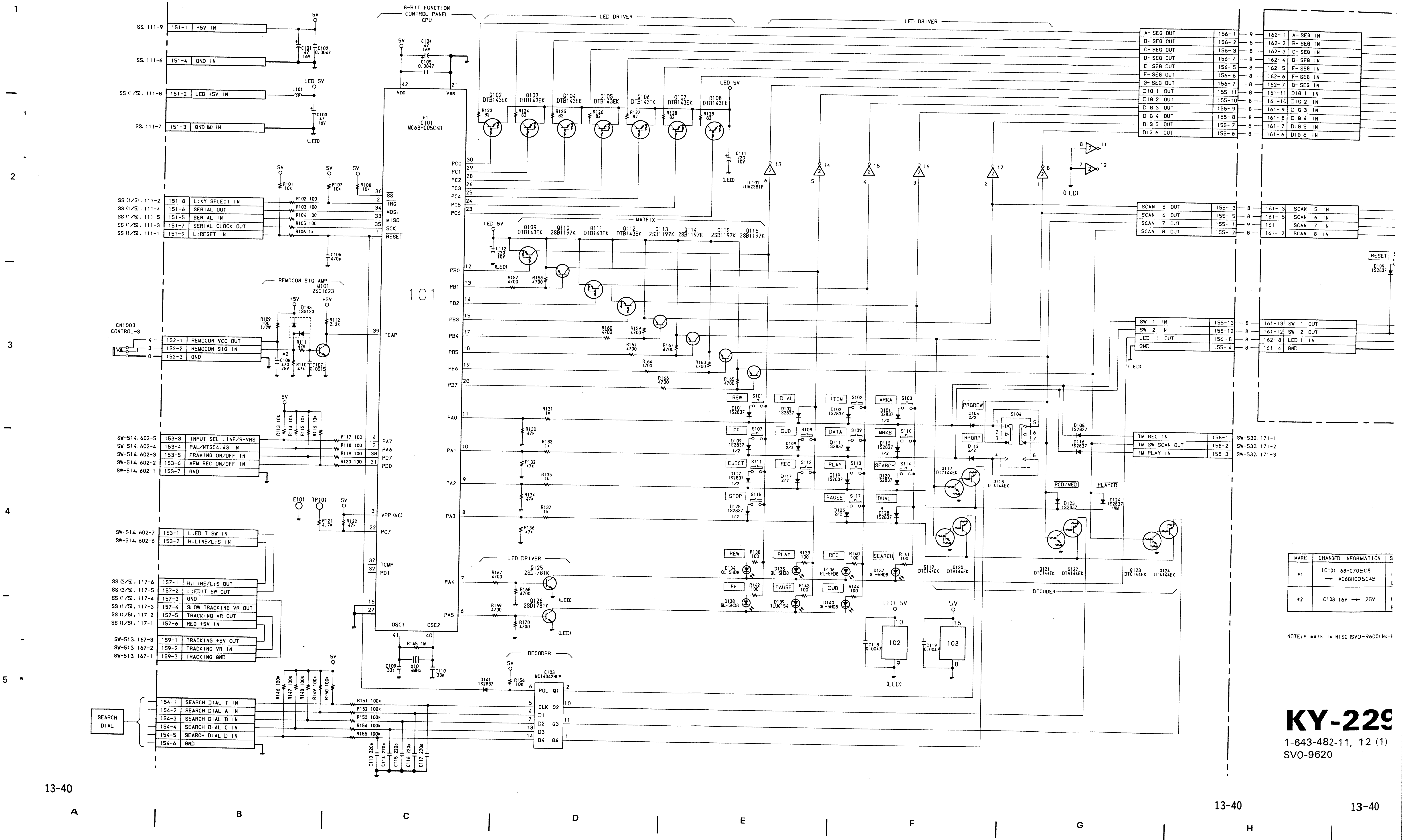


Measurement Condition
PB mode: KRV-45HPS

SS-49C (5/5)

1-641-575-14 (1)
SVO-9620

DP-166; COUNTER DISPLAY
KY-229A; FUNCTION KEY/LED/SWITCH

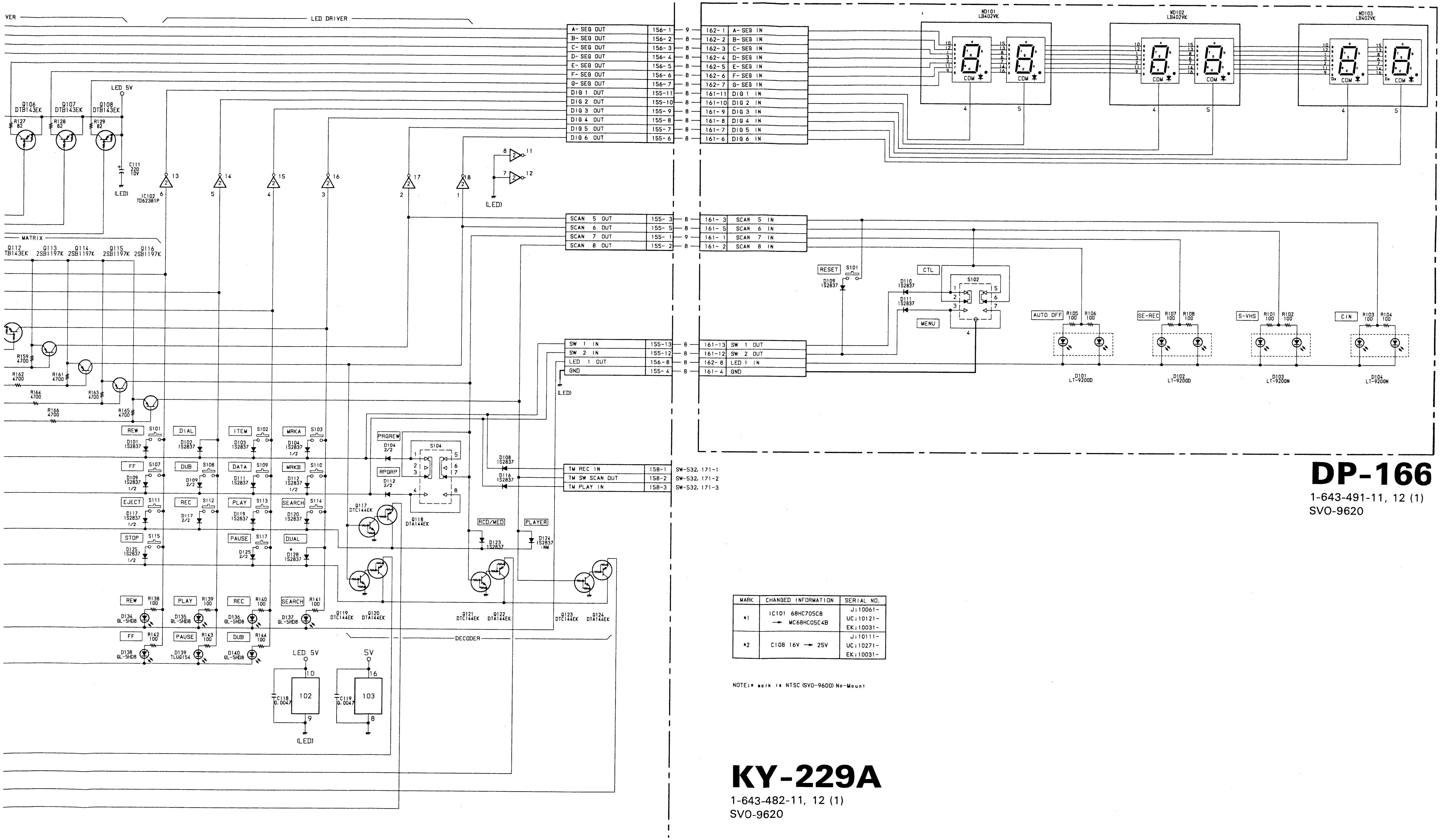

8-BIT FUNCTION CONTROL PANEL CPU
LED DRIVER
LED DRIVER
IC101 MC68HC05C4B
101
SS 111-9
151-1 +5V IN
SS 111-6
151-4 GND IN
SS (1/S). 111-8
151-2 LED +5V IN
SS 111-7
151-3 GND (M) IN
151-8 L:KY SELECT IN
151-6 SERIAL OUT
151-5 SERIAL IN
151-7 SERIAL CLOCK OUT
151-9 L:RESET IN
REMOCON SIG AMP
Q101 2SC1623
CN1003 CONTROL-S
152-1 REMOCON VCC OUT
152-2 REMOCON SIG IN
152-3 GND
153-3 INPUT SEL LINE/S-VHS
153-4 PAL/NTSC4.43 IN
153-5 FRAMING ON/OFF IN
153-6 AFM REC ON/OFF IN
153-7 GND
153-1 L:EDIT SW IN
153-2 H:LINE/L:S IN
157-1 H:LINE/L:S OUT
157-2 L:EDIT SW OUT
157-3 GND
157-4 SLOW TRACKING VR OUT
157-5 TRACKING VR OUT
157-6 REG +5V IN
159-1 TRACKING +5V OUT
159-2 TRACKING VR IN
159-3 TRACKING GND
SEARCH DIAL
154-1 SEARCH DIAL T IN
154-2 SEARCH DIAL A IN
154-3 SEARCH DIAL B IN
154-4 SEARCH DIAL C IN
154-5 SEARCH DIAL D IN
154-6 GND
DECODER
IC103 MC14042BCP
POL Q1
CLK Q2
D1
D2 Q3
D3
D4 Q4
Q102 DTB143EK
Q103 DTB143EK
Q104 DTB143EK
Q105 DTB143EK
Q106 DTB143EK
Q107 DTB143EK
Q108 DTB143EK
MATRIX
Q109 DTB143EK
Q110 2SB1197K
Q111 DTB143EK
Q112 DTB143EK
Q113 2SB1197K
Q114 2SB1197K
Q115 2SB1197K
Q116 2SB1197K
IC102 TD62381P
Q125 2SD1781K
Q126 2SD1781K
X101 4MHz
A-SEG OUT
B-SEG OUT
C-SEG OUT
D-SEG OUT
E-SEG OUT
F-SEG OUT
G-SEG OUT
DIG 1 OUT
DIG 2 OUT
DIG 3 OUT
DIG 4 OUT
DIG 5 OUT
DIG 6 OUT
A-SEG IN
B-SEG IN
C-SEG IN
D-SEG IN
E-SEG IN
F-SEG IN
G-SEG IN
DIG 1 IN
DIG 2 IN
DIG 3 IN
DIG 4 IN
DIG 5 IN
DIG 6 IN
SCAN 5 OUT
SCAN 6 OUT
SCAN 7 OUT
SCAN 8 OUT
SCAN 5 IN
SCAN 6 IN
SCAN 7 IN
SCAN 8 IN
RESET
SW 1 IN
SW 2 IN
LED 1 OUT
GND
SW 1 OUT
SW 2 OUT
LED 1 IN
GND
REW
DIAL
ITEM
MRKA
FF
DUB
DATA
MRKB
EJECT
REC
PLAY
SEARCH
STOP
PAUSE
DUAL
PRGREW
RPGRP
S104
RCD/MED
PLAYER
TM REC IN
TM SW SCAN OUT
TM PLAY IN
SW-532. 171-1
SW-532. 171-2
SW-532. 171-3
REW
PLAY
REC
SEARCH
FF
PAUSE
DUB
D134 GL-SHD8
D135 GL-SHD8
D136 GL-SHD8
D137 GL-SHD8
D138 GL-SHD8
D139 TLUG154
D140 GL-SHD8
DECODER
LED 5V
5V
102
103
A
B
C
D
E
F
G
H
1
2
3
4
5

MARK	CHANGED INFORMATION
*1	IC101 68HC705C8 → MC68HC05C4B
*2	C108 16V → 25V

NOTE: * mark is NTSC (SVO-9600) No-

KY-229

1-643-482-11, 12 (1)
SVO-9620


LED DRIVER
MATRIX
DECODER
A-SEG OUT
B-SEG OUT
C-SEG OUT
D-SEG OUT
E-SEG OUT
F-SEG OUT
G-SEG OUT
DIG 1 OUT
DIG 2 OUT
DIG 3 OUT
DIG 4 OUT
DIG 5 OUT
DIG 6 OUT
A-SEG IN
B-SEG IN
C-SEG IN
D-SEG IN
E-SEG IN
F-SEG IN
G-SEG IN
DIG 1 IN
DIG 2 IN
DIG 3 IN
DIG 4 IN
DIG 5 IN
DIG 6 IN
SCAN 5 OUT
SCAN 6 OUT
SCAN 7 OUT
SCAN 8 OUT
SCAN 5 IN
SCAN 6 IN
SCAN 7 IN
SCAN 8 IN
SW 1 IN
SW 2 IN
LED 1 OUT
GND
SW 1 OUT
SW 2 OUT
LED 1 IN
TM REC IN
TM SW SCAN OUT
TM PLAY IN
SW-532, 171-1
SW-532, 171-2
SW-532, 171-3
ND101 LB402VK
ND102 LB402VK
ND103 LB402VK
COM
LED 5V
5V
(LED)
IC102 TD62381P
Q106 DTB143EK
Q107 DTB143EK
Q108 DTB143EK
Q112 DTB143EK
Q113 2SB1197K
Q114 2SB1197K
Q115 2SB1197K
Q116 2SB1197K
C111 220 10V
RESET
S101
CTL
S102
MENU
AUTO OFF
SE-REC
S-VHS
CIN
D101 LT-9200D
D102 LT-9200D
D103 LT-9200N
D104 LT-9200N
REW
FF
EJECT
STOP
DIAL
DUB
REC
ITEM
DATA
PLAY
PAUSE
MRKA
MRKB
SEARCH
DUAL
PRGREW
RPGRP
S104
RCD/MED
PLAYER
Q117 DTC144EK
Q118 DTA144EK
Q119 DTC144EK
Q120 DTA144EK
Q121 DTC144EK
Q122 DTA144EK
Q123 DTC144EK
Q124 DTA144EK
102
103
C118 0.0047
C119 0.0047

DP-166

1-643-491-11, 12 (1)
SVO-9620

MARK	CHANGED INFORMATION	SERIAL NO.
*1	IC101 68HC705C8 → MC68HC05C4B	J:10061- UC:10121- EK:10031-
*2	C108 16V → 25V	J:10111- UC:10271- EK:10031-

NOTE:* mark is NTSC (SVO-9600) No-Mount

KY-229A

1-643-482-11, 12 (1)
SVO-9620

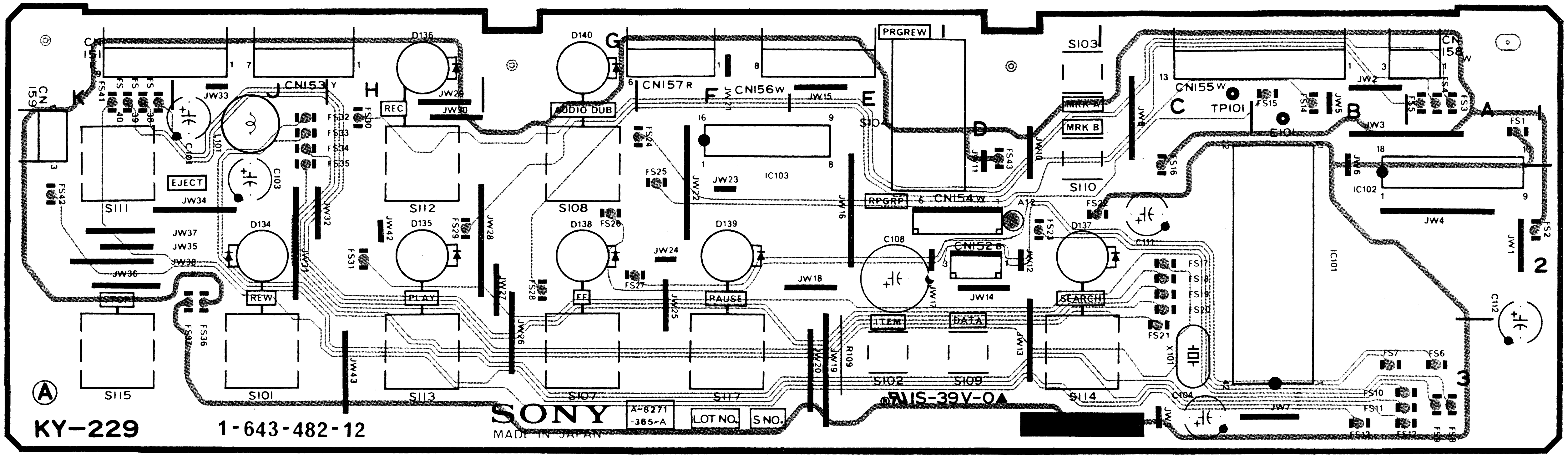
DP-166 ; COUNTER DISPLAY
Serial No. 10031 and higher

KY-229A ; FUNCTION KEY/LED/SWITCH
Serial No. 10681 and higher

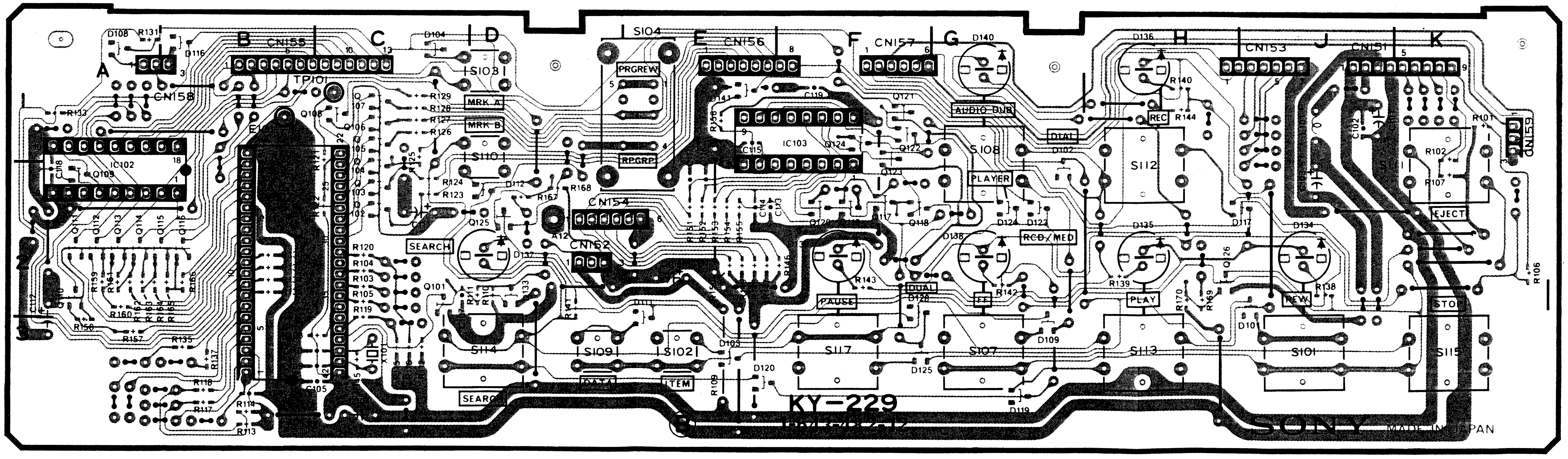
KY-229A (1-643-482-12)

CN151	K-1
CN152	D-2
CN153	J-1
CN154	E-2
CN155	C-1
CN156	F-1
CN157	F-1
CN158	A-1
CN159	K-1
D101	J-3 *
D102	G-1 *
D103	E-3 *
D104	C-1 *
D108	A-1 *
D109	G-3 *
D111	E-2 *
D112	D-2 *
D116	B-1 *
D117	H-2 *
D119	G-3 *
D120	E-3 *
D123	G-2 *
D125	F-3 *
D128	F-2 *
D133	D-2 *
D134	J-2
D135	H-2
D136	H-1
D137	D-2
D138	G-2
D139	F-2
D140	G-1
D141	E-1 *
E101	B-1
IC101	B-2
IC102	B-2
IC103	F-2
Q101	C-2 *
Q102	C-2 *
Q103	C-2 *
Q104	C-2 *
Q105	C-1 *
Q106	C-1 *
Q107	C-1 *
Q108	B-1 *
Q109	A-2 *
Q110	A-2 *
Q111	A-2 *
Q112	A-2 *
Q113	A-2 *
Q114	A-2 *
Q115	A-2 *
Q116	B-2 *
Q117	F-2 *
Q118	F-2 *
Q119	F-2 *
Q120	F-2 *
Q121	F-1 *
Q122	F-1 *
Q123	F-1 *
Q124	F-1 *
Q125	D-2 *
Q126	H-2 *
S101	J-3
S102	E-3
S103	D-1
S104	E-1
S107	G-3
S108	G-2
S109	D-3
S110	D-2
S111	K-2
S112	H-2
S113	H-3
S114	D-3
S115	K-3
S117	F-3
TP101	C-1
X101	C-3

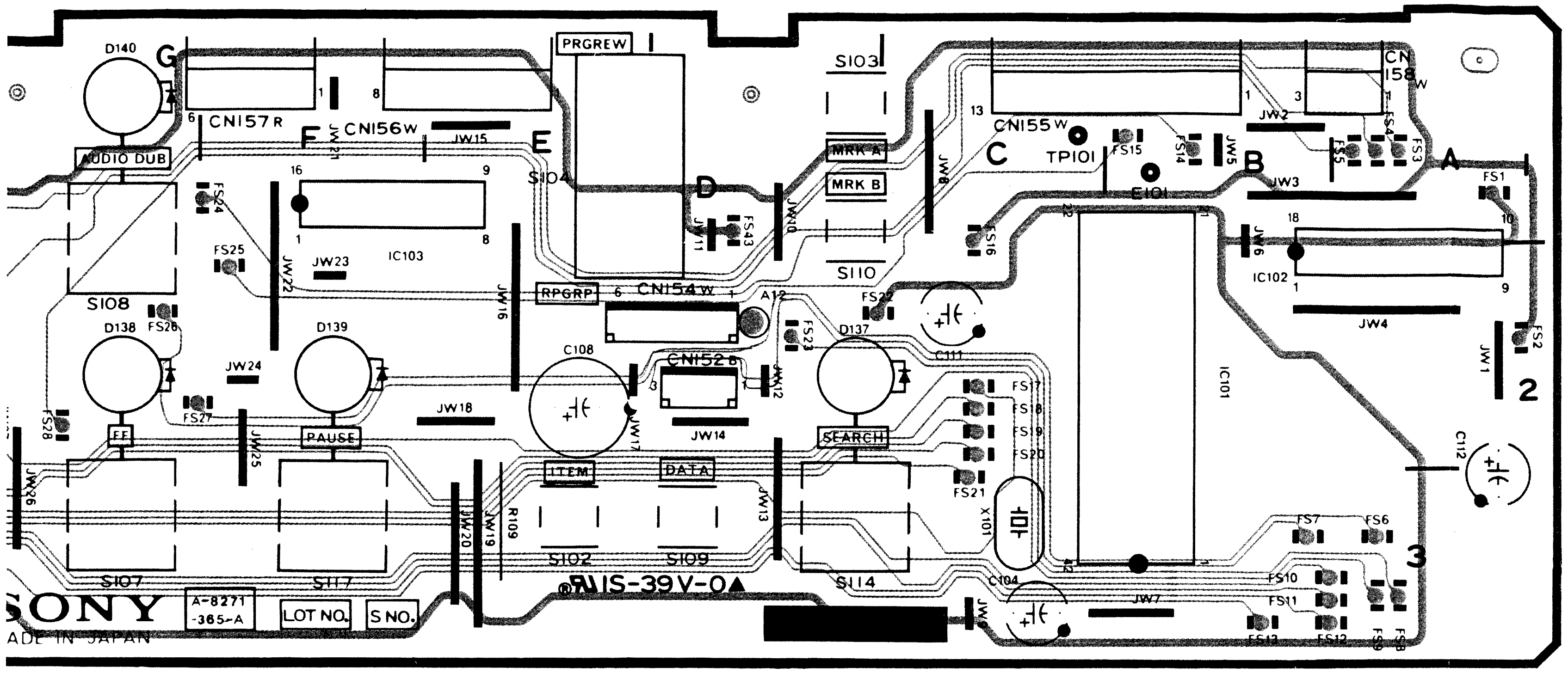
* mark ; B SIDE mount


K
J
H
G
F
E
D
C
B
A
1
2
3
CN151
CN159
CN153
CN157R
CN156W
CN155W
CN158W
CN154W
CN152B
D140
D136
D134
D135
D138
D139
D137
S111
S112
S108
S101
S113
S107
S117
S102
S109
S114
S115
S103
S110
S104
EJECT
REC
AUDIO DUB
PRGREW
RPGRP
MRK A
MRK B
REW
PLAY
FF
PAUSE
ITEM
DATA
SEARCH
STOP
IC101
IC102
IC103
C101
C103
C108
C111
C112
C104
L101
TP101
E101
X101
A12
Ⓐ
KY-229
1-643-482-12
SONY
MADE IN JAPAN
A-8271-365-A
LOT NO.
S NO.
IS-39V-0

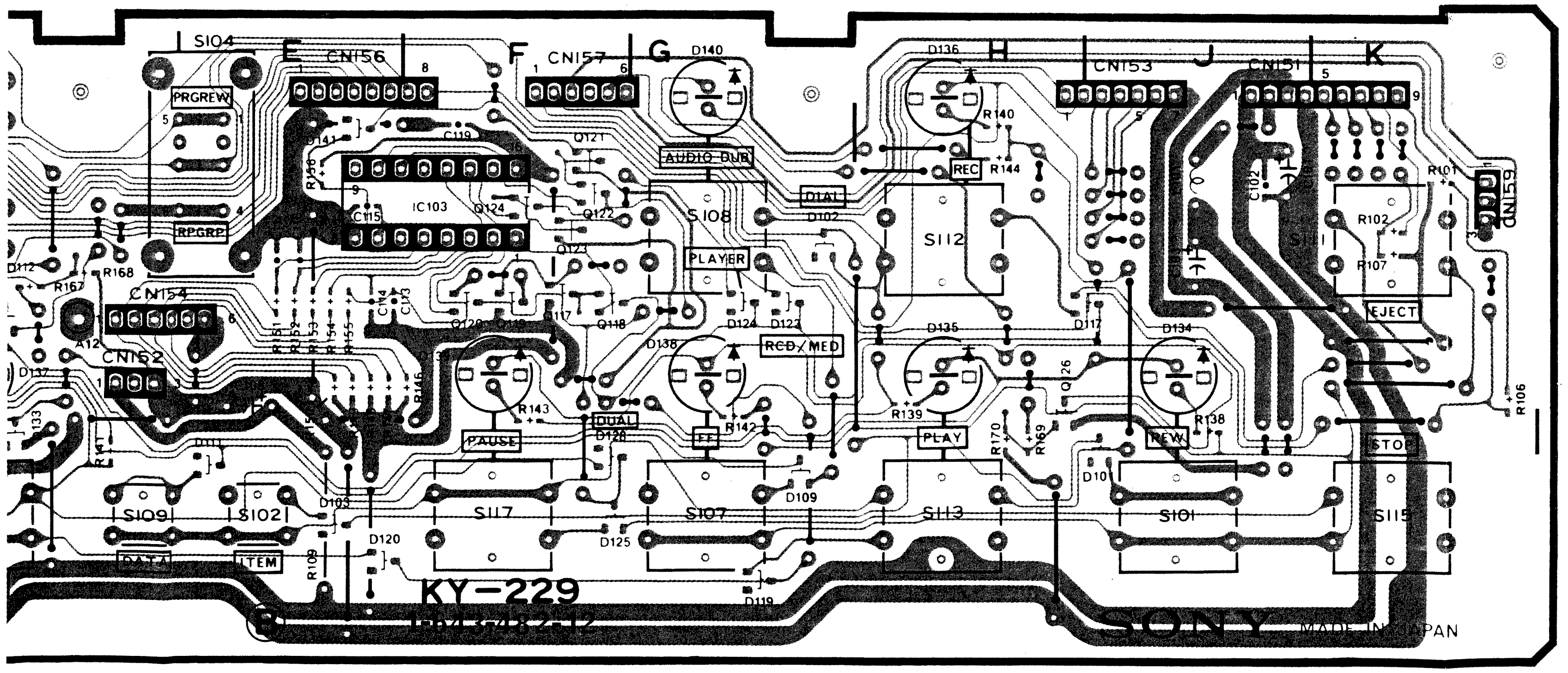
KY-229A — A SIDE —
1-643-482-12 (1)
SVO-9620


A
B
C
D
E
F
G
H
J
K
CN158
CN155
CN156
CN157
CN153
CN151
CN159
CN154
CN152
TP101
IC102
IC103
S103
S104
S110
S108
S112
S111
S114
S109
S102
S117
S107
S113
S101
S115
PRGREW
RPGRP
MRK A
MRK B
AUDIO DUB
DIAL
PLAYER
RCD/MED
REC
EJECT
SEARCH
PAUSE
FF
PLAY
REW
STOP
DUAL
DATA
ITEM
D108
D116
D104
D140
D136
D137
D135
D134
D138
Q108
Q101
Q125
R131
R132
R129
R128
R127
R126
R123
R124
R120
R104
R105
R119
R106
R101
R102
R107
R140
R144
R143
R142
R139
R138
KY-229
SONY
MADE IN JAPAN

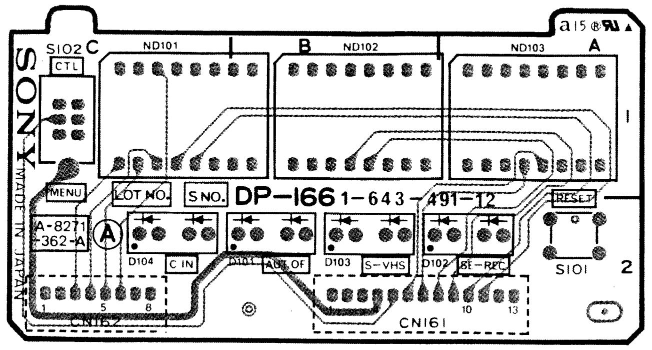
KY-229A — B SIDE —
1-643-482-12 (1)
SVO-9620


PRGREW
CN157
CN156
CN155
CN158
AUDIO DUB
IC103
IC102
IC101
S108
S103
S110
S104
MRK A
MRK B
RPGRP
CN154
CN152
FF
PAUSE
ITEM
DATA
SEARCH
S107
S117
S102
S109
S114
SONY
A-8271-365-A
LOT NO.
S NO.
IS-39V-0
MADE IN JAPAN

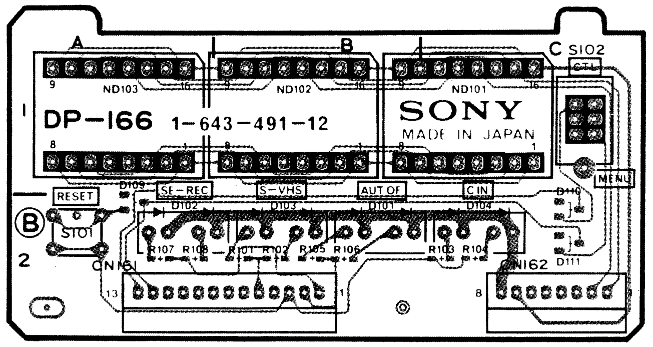
KY-229A — A SIDE —
1-643-482-12 (1)
SVO-9620


S104
CN156
CN157
CN153
CN151
PRGREW
RPGRP
AUDIO DUB
DIAL
REC
PLAYER
EJECT
RCD/MED
DUAL
PAUSE
FF
PLAY
REW
STOP
S109
S102
S117
S107
S113
S101
S115
DATA
ITEM
CN154
CN152
IC103
S108
S112
S111
KY-229
SONY
MADE IN JAPAN

KY-229A — B SIDE —
1-643-482-12 (1)
SVO-9620


SONY
MADE IN JAPAN
S102
CTL
ND101
ND102
ND103
MENU
LOT NO.
S NO.
DP-166 1-643-491-12
RESET
A-8271-362-A
C IN
AUT OF
S-VHS
SE-REC
S101
CN162
CN161

DP-166 — A SIDE —
1-643-491-12 (1)
SVO-9620


ND103
ND102
ND101
S102
CTL
DP-166 1-643-491-12
SONY
MADE IN JAPAN
MENU
RESET
S101
SE-REC
S-VHS
AUT OF
C IN
CN161
CN162

DP-166 — B SIDE —
1-643-491-12 (1)
SVO-9620

DP-166, KY-229A

DP-166 ; COUNTER DISPLAY

Serial No. 10001-10030

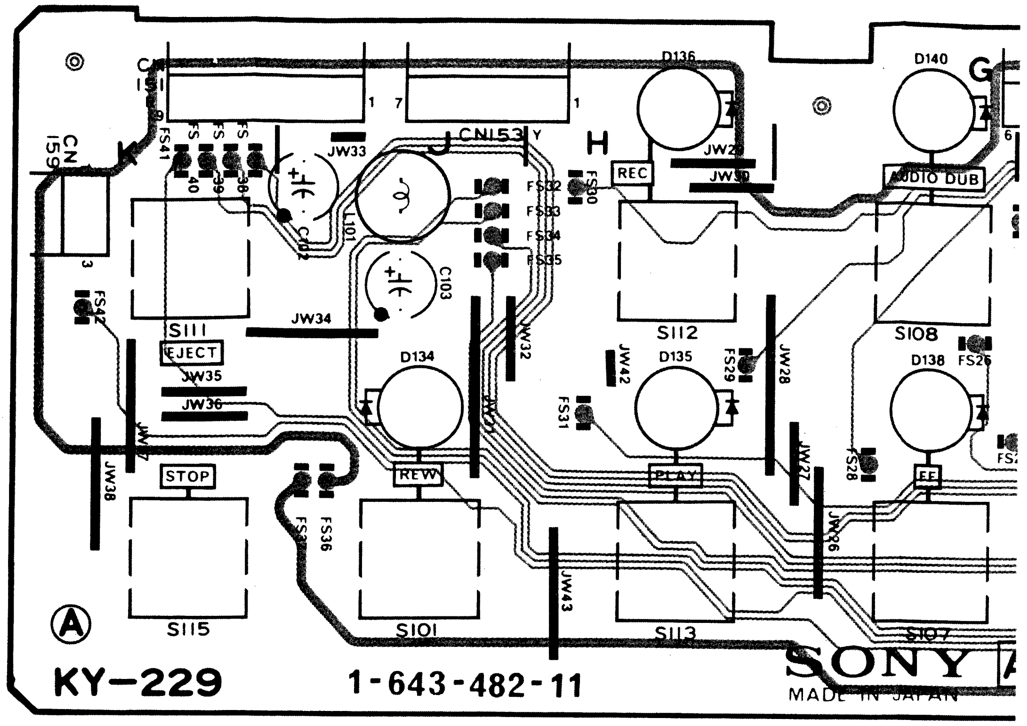
KY-229A ; FUNCTION KEY/LED/SWITCH

Serial No. 10001-10680

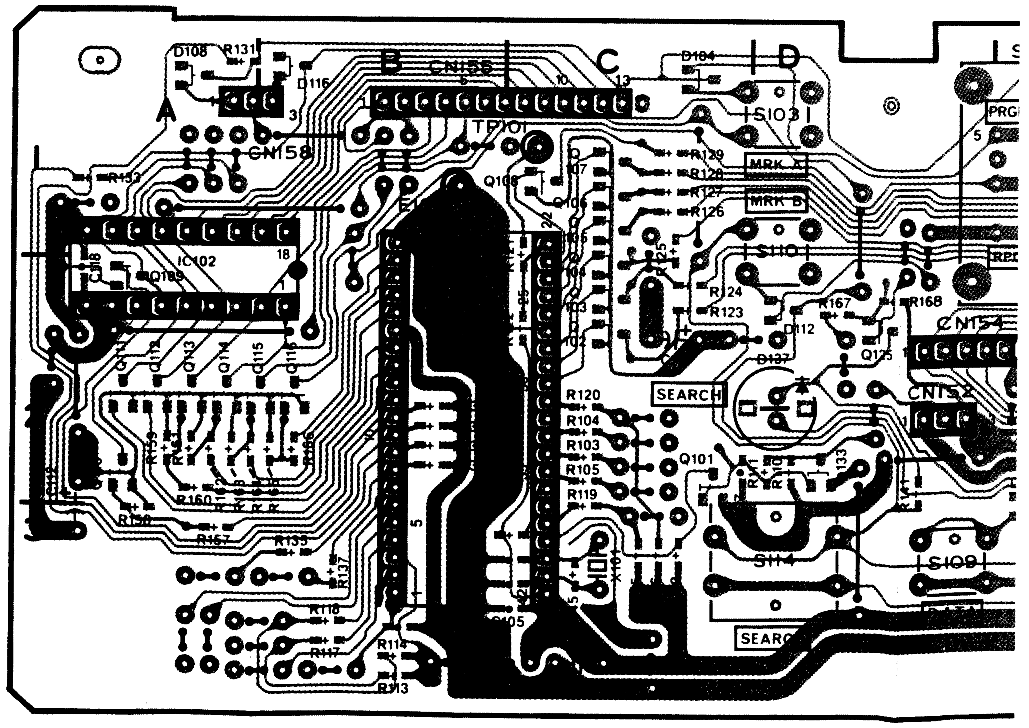
KY-229A (1-643-482-11)

CN151	K-1
CN152	D-2
CN153	J-1
CN154	E-2
CN155	C-1
CN156	F-1
CN157	F-1
CN158	A-1
CN159	K-1
D101	J-3 *
D102	G-1 *
D103	E-3 *
D104	C-1 *
D108	A-1 *
D109	G-3 *
D111	E-2 *
D112	D-2 *
D116	B-1 *
D117	H-2 *
D119	G-3 *
D120	E-3 *
D123	G-2 *
D125	F-3 *
D133	D-2 *
D134	J-2
D135	H-2
D136	H-1
D137	D-2
D138	G-2
D139	F-2
D140	G-1
D141	E-1 *
E101	B-1
IC101	B-2
IC102	B-2
IC103	F-2
Q101	C-2 *
Q102	C-2 *
Q103	C-2 *
Q104	C-2 *
Q105	C-1 *
Q106	C-1 *
Q107	C-1 *
Q108	B-1 *
Q109	A-2 *
Q110	A-2 *
Q111	A-2 *
Q112	A-2 *
Q113	A-2 *
Q114	A-2 *
Q115	A-2 *
Q116	B-2 *
Q117	F-2 *
Q118	F-2 *
Q119	F-2 *
Q120	F-2 *
Q121	F-1 *
Q122	F-1 *
Q123	F-1 *
Q124	F-1 *
Q125	D-2 *
Q126	H-2 *
S101	J-3
S102	E-3
S103	D-1
S104	E-1
S107	G-3
S108	G-2
S109	D-3
S110	D-2
S111	K-2
S112	H-2
S113	H-3
S114	D-3
S115	K-3
S117	F-3
TP101	C-1
X101	C-3

* mark ; B SIDE mount

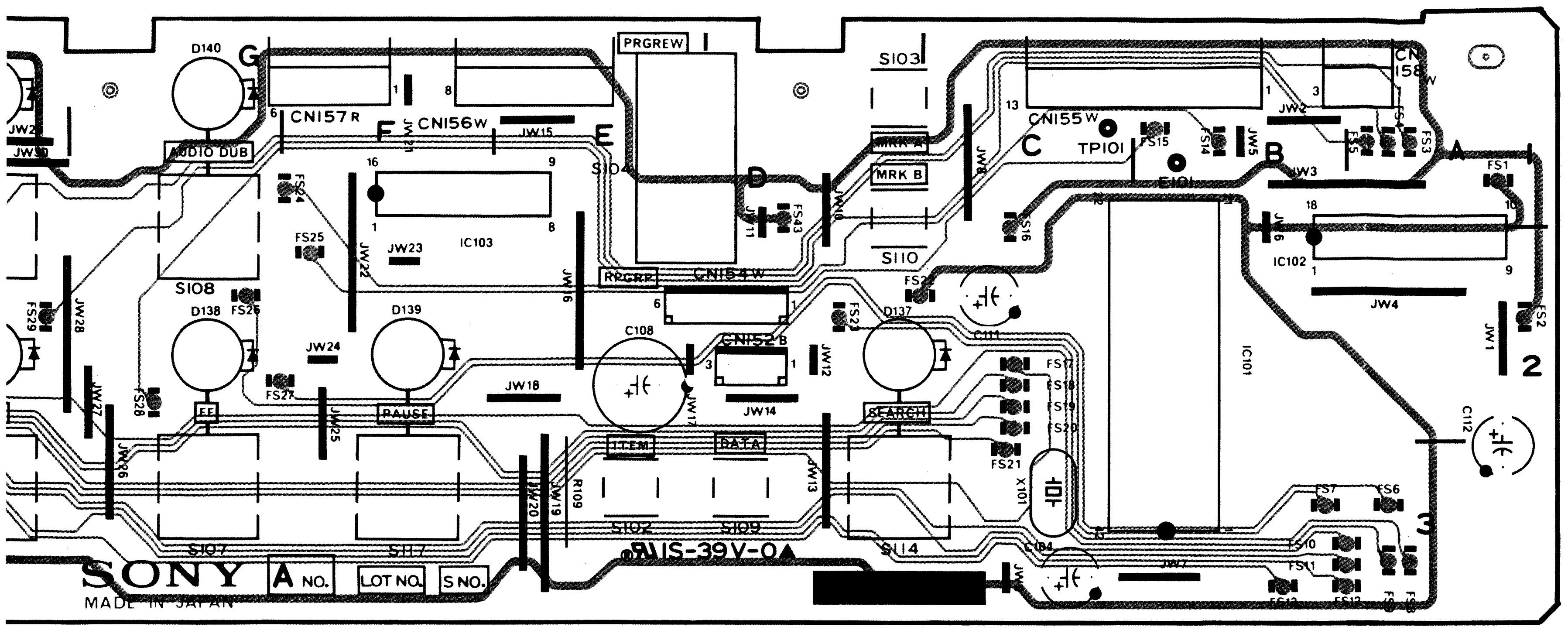


Ⓐ
KY-229
1-643-482-11
SONY
MADE IN JAPAN
CN151
CN159
CN153
D136
D140
D134
D135
D138
H
J
K
G
REC
AUDIO DUB
EJECT
STOP
REW
PLAY
FF
S111
S112
S108
S115
S101
S113
S107
C102
C103
L101
JW33
JW34
JW35
JW36
JW32
JW42
JW28
JW27
JW38
JW43
JW26
FS41
FS42
FS30
FS31
FS32
FS33
FS34
FS35
FS36
FS29
FS28

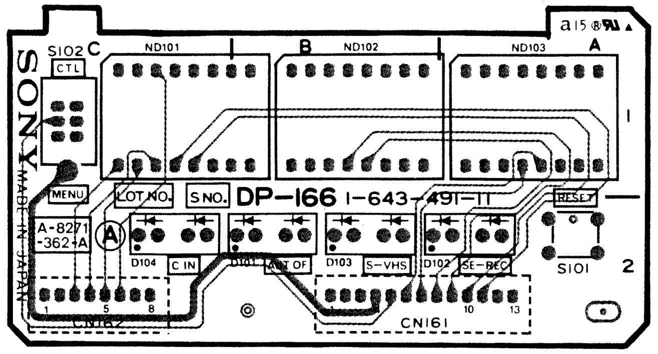


A
B
C
D
D108
R131
D116
CN155
D104
S103
CN158
TP101
IC102
IC101
MRK A
MRK B
S110
R167
R168
CN154
CN152
D112
D137
SEARCH
R120
R104
R103
R105
R119
Q101
S114
S109
X101
R132
R156
R157
R160
R135
R137
R116
R117
R114
R113
R129
R128
R127
R126
R124
R123

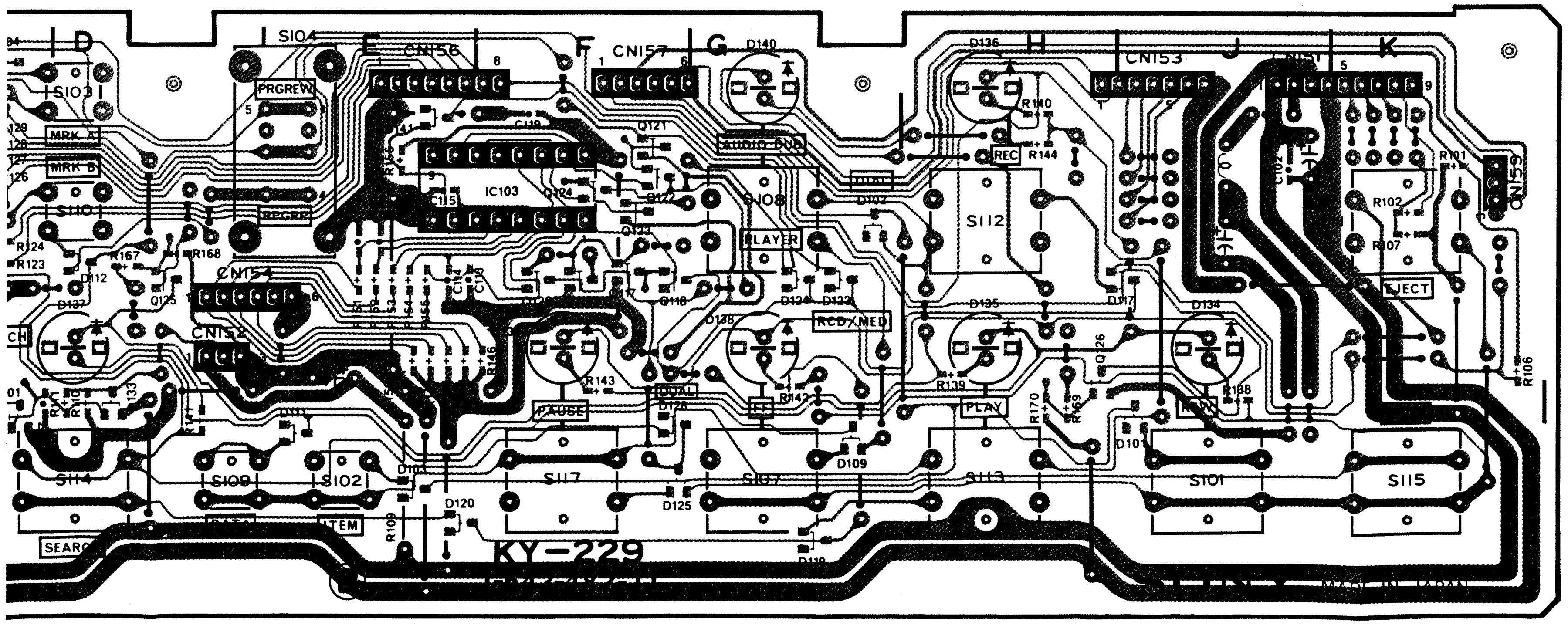
13-41 (a)


D140
G
CN157R
CN156W
JW15
E
PRGREW
S103
CN155W
TP101
E101
CN158W
FS1
A
B
C
D
F
AUDIO DUB
IC103
S108
D138
D139
JW18
C108
CN152B
CN154W
S110
MRK A
MRK B
D137
C111
IC102
JW4
IC101
JW1
C112
FF
PAUSE
ITEM
DATA
SEARCH
X101
S107
S117
S102
S109
S114
IS-39V-0A
SONY
MADE IN JAPAN
A NO.
LOT NO.
S NO.
JW7
1
2
3

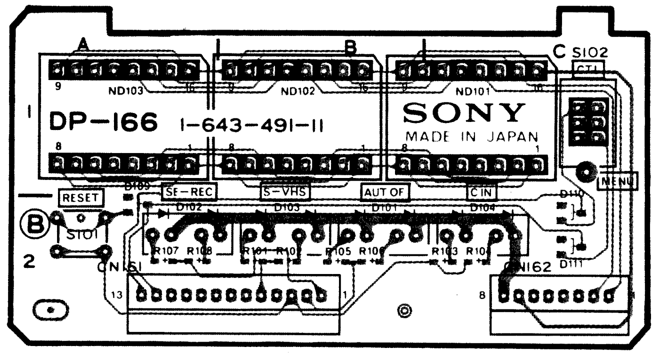
KY-229A — A SIDE —
1-643-482-11 (1)
SVO-9620


S102
C
CTL
ND101
B
ND102
ND103
A
SONY
MADE IN JAPAN
MENU
LOT NO.
S NO.
DP-166 1-643-491-11
RESET
A-8271-362-A
D104
C IN
D101
AUT OF
D103
S-VHS
D102
SE-REC
S101
CN162
CN161
1
2

DP-166 — A SIDE —
1-643-491-11 (1)
SVO-9620


S104
D
E
CN156
F
CN157
G
D140
D136
H
CN153
J
K
S103
MRK A
MRK B
PRGREW
RPGRP
S110
IC103
AUDIO DUB
S108
PLAYER
DIAL
REC
R144
R140
S112
R101
R102
R107
EJECT
CN154
CN152
D137
PAUSE
R143
D138
RCD/MED
D135
R139
PLAY
D134
R138
R106
S114
S109
S102
DATA
ITEM
SEARCH
S117
S107
S113
S101
S115
D120
D125
D109
KY-229
SONY
MADE IN JAPAN

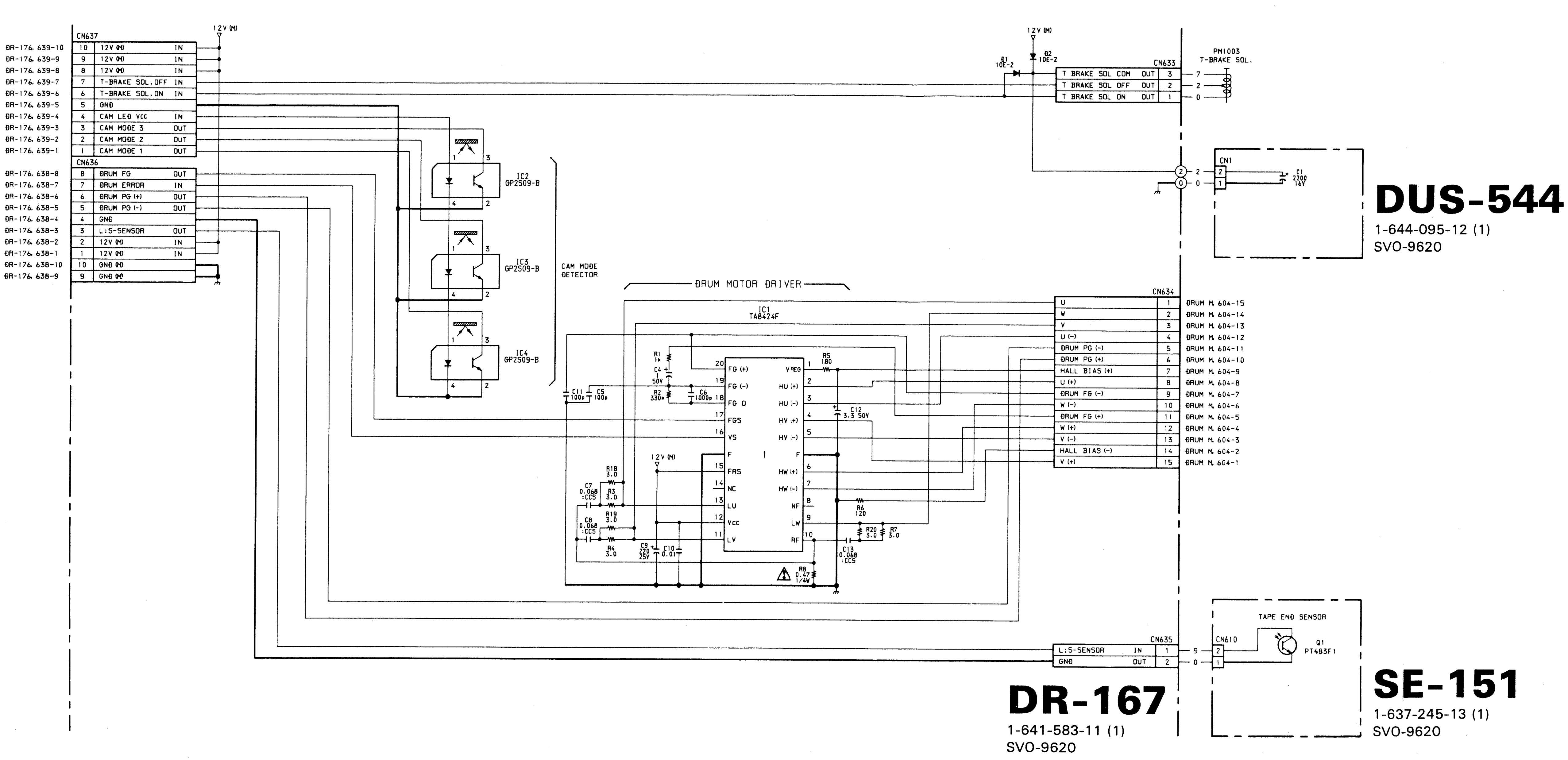
KY-229A — B SIDE —
1-643-482-11 (1)
SVO-9620

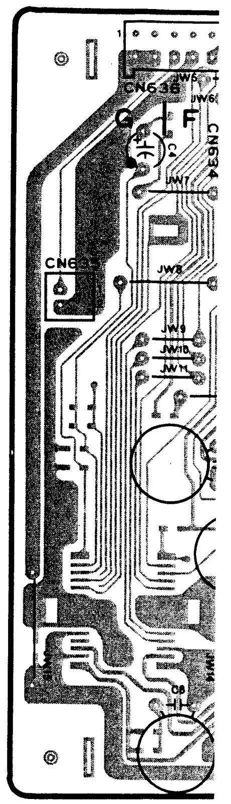

A
B
C
S102
ND103
ND102
ND101
CTL
DP-166 1-643-491-11
SONY
MADE IN JAPAN
RESET
SE-REC
S-VHS
AUT OF
C IN
MENU
S101
CN151
CN162
B
1
2

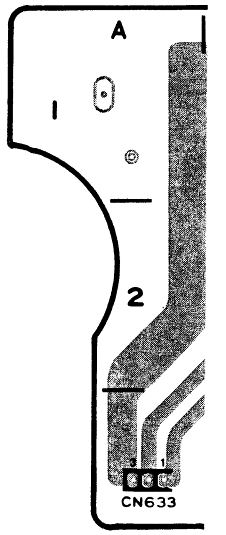
DP-166 — B SIDE —
1-643-491-11 (1)
SVO-9620

DR-167, SE-151, DUS-544

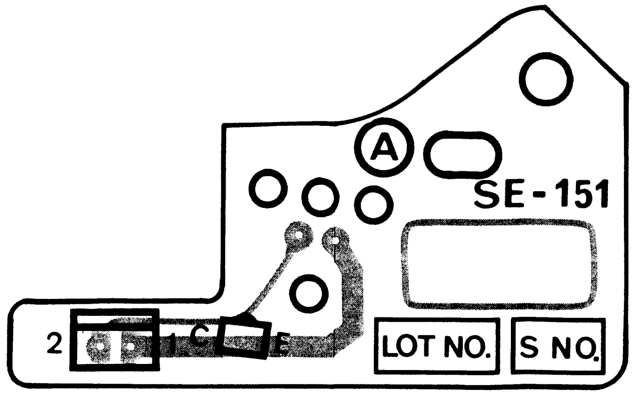
DR-167 ; CAM MODE DETECT & DRUM MOTOR DRIVER
DUS-544 ; CAPACITOR FOR T-BRAKE SOLENOID
SE-151 ; TAPE END SENSOR


CN637
12V (M)
T-BRAKE SOL.OFF
T-BRAKE SOL.ON
GND
CAM LED VCC
CAM MODE 3
CAM MODE 2
CAM MODE 1
CN636
DRUM FG
DRUM ERROR
DRUM PG (+)
DRUM PG (-)
L:S-SENSOR
GND (M)
IC2 GP2S09-B
IC3 GP2S09-B
IC4 GP2S09-B
CAM MODE DETECTOR
DRUM MOTOR DRIVER
IC1 TA8424F
CN633
T BRAKE SOL COM
T BRAKE SOL OFF
T BRAKE SOL ON
PM1003 T-BRAKE SOL.
CN1
C1 2200 16V
DUS-544
1-644-095-12 (1)
SVO-9620
CN634
CN635
TAPE END SENSOR
CN610
Q1 PT483F1
SE-151
1-637-245-13 (1)
SVO-9620
DR-167
1-641-583-11 (1)
SVO-9620

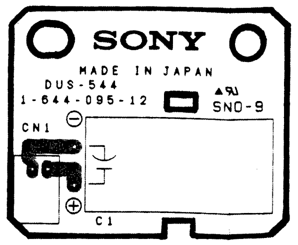

CN636
CN634
JW8
C8



NOTE :
The ⚠ -marked components are critical to sefety.
Replace only with same components as specified.

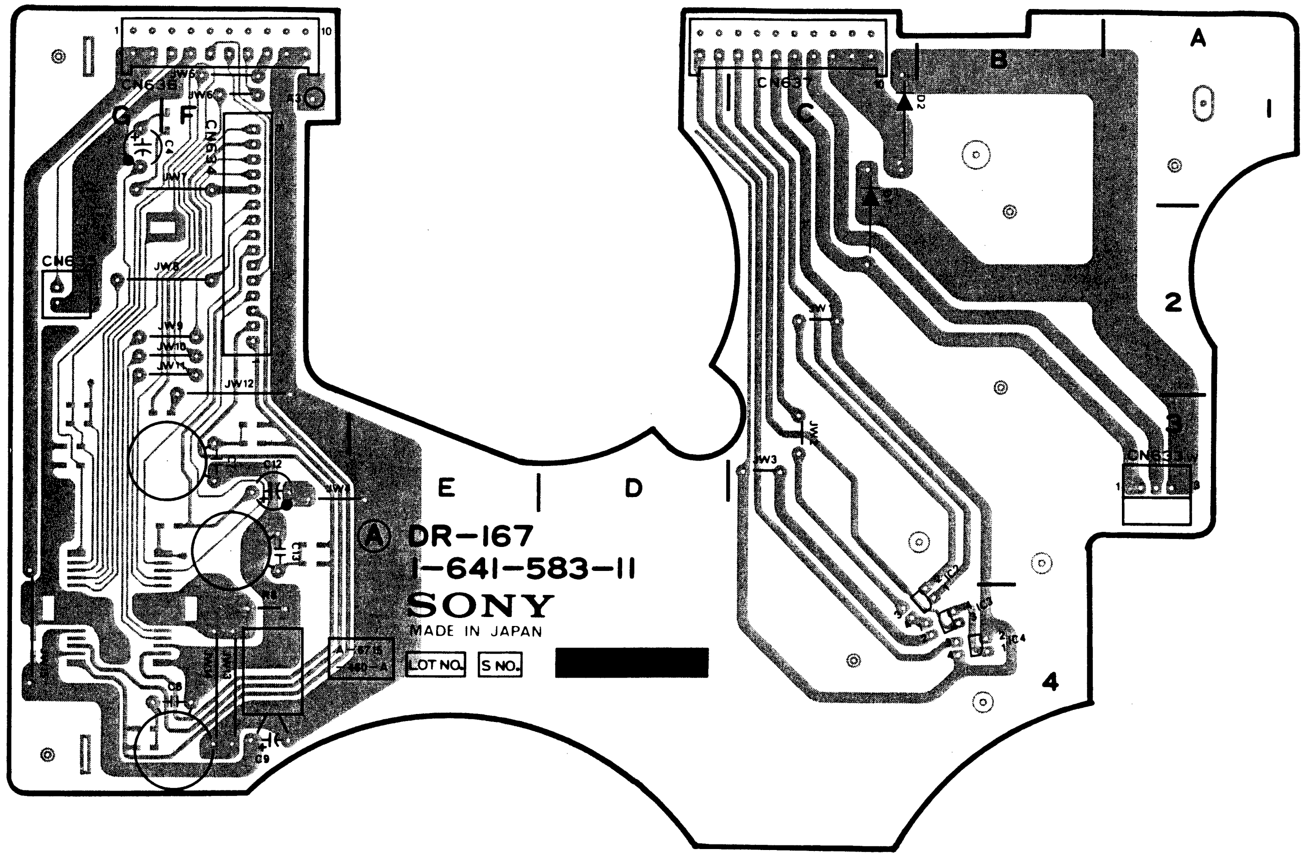

A
SE-151
2
1
LOT NO.
S NO.

SE-151 — A SIDE —
1-637-245-13 (1)
SVO-9620

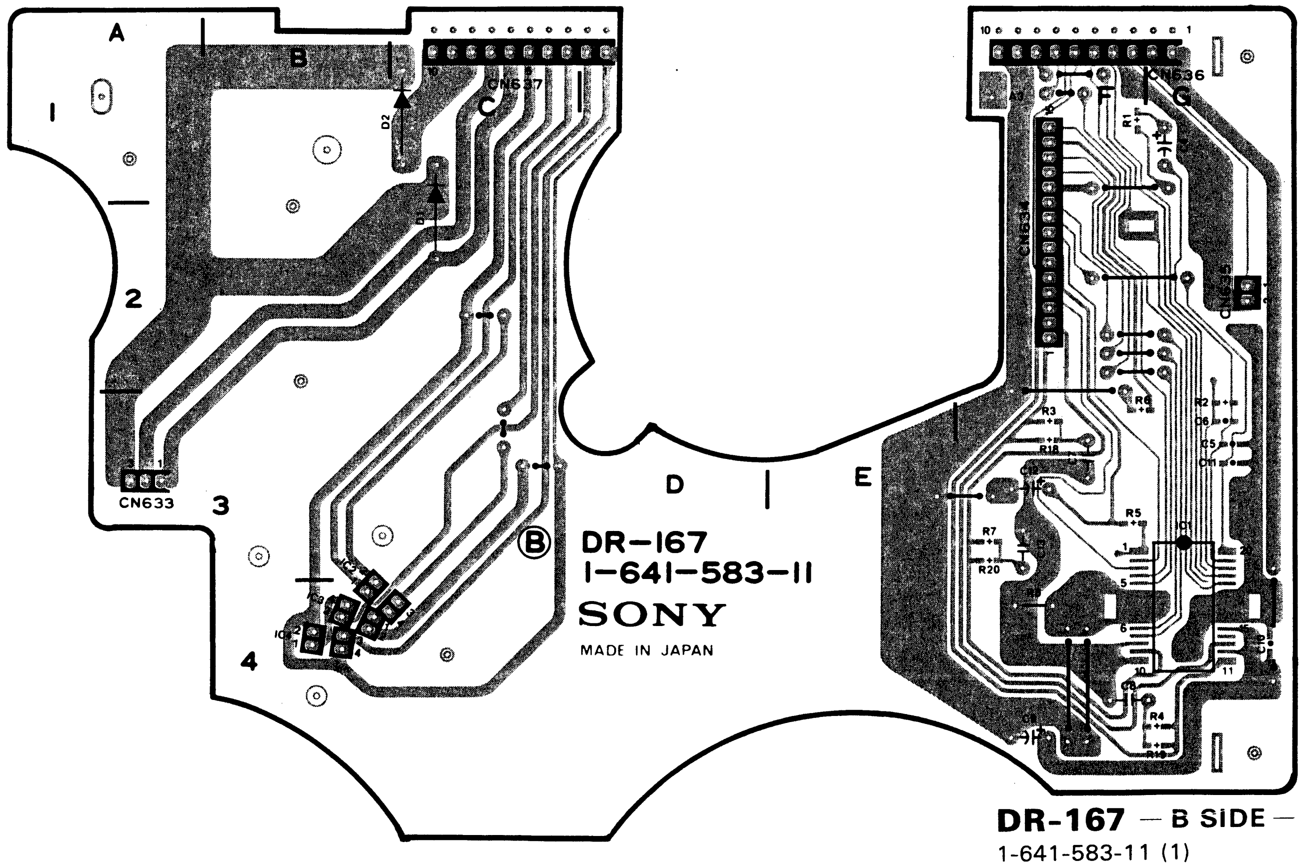

SONY
MADE IN JAPAN
DUS-544
1-644-095-12
SNO-9
CN1
C1

DUS-544 — A SIDE —
1-644-095-12 (1)
SVO-9620

13-42

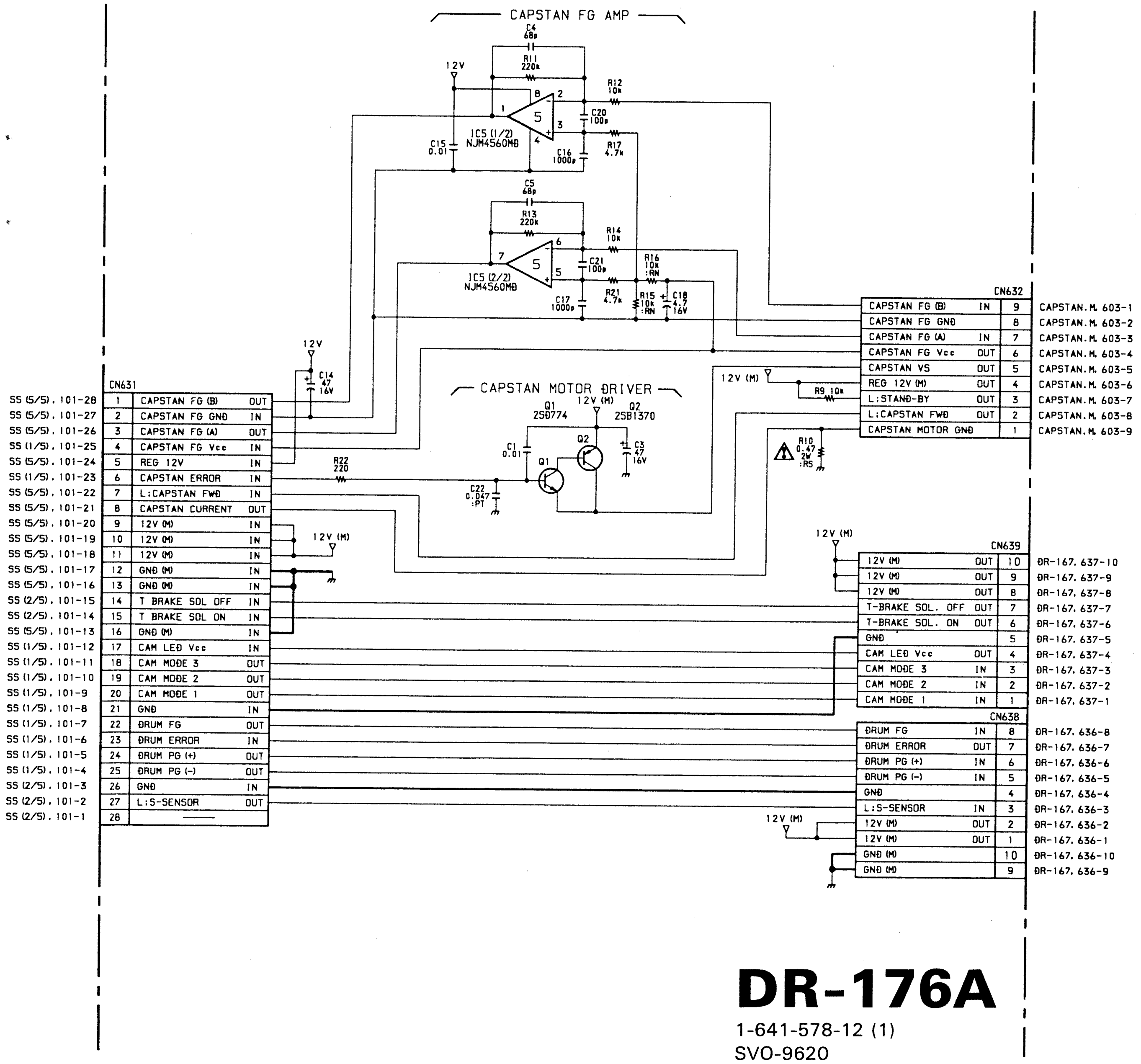

CN636
CN634
CN635
CN637
CN633
JW1
JW2
JW3
JW4
JW5
JW6
JW9
JW10
JW11
JW12
C4
C8
C9
C12
D1
D2
A
B
C
D
E
F
G
I
2
3
4
Ⓐ DR-167
1-641-583-11
SONY
MADE IN JAPAN
LOT NO.
S NO.

DR-167 — A SIDE —
1-641-583-11 (1)
SVO-9620

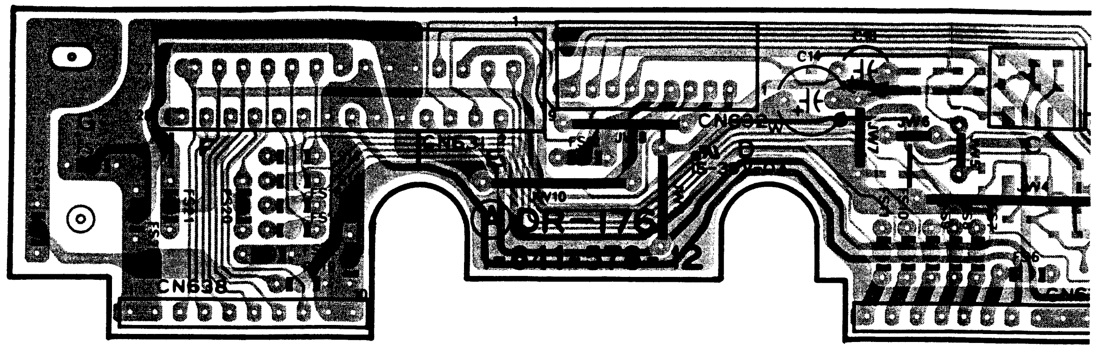

A
B
C
D
E
G
I
2
3
4
CN637
CN636
CN634
CN633
D1
D2
IC2
IC1
R1
R2
R3
R4
R5
R6
R7
R18
R19
R20
C5
C6
C8
C11
Ⓑ DR-167
1-641-583-11
SONY
MADE IN JAPAN

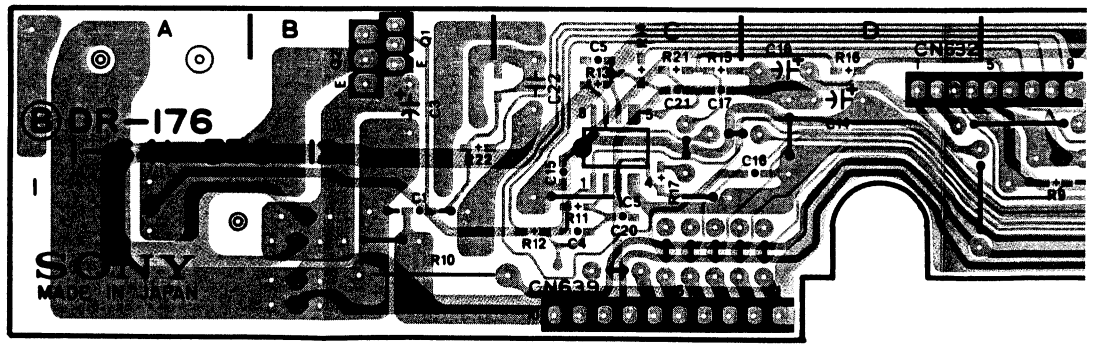
DR-167 — B SIDE —
1-641-583-11 (1)
SVO-9620

DR-176A; CAPSTAN FG AMP & CAPSTAN MOTOR DRIVER


CAPSTAN FG AMP
C4 68p
R11 220k
12V
R12 10k
C20 100p
IC5 (1/2) NJM4560MD
C15 0.01
C16 1000p
R17 4.7k
C5 68p
R13 220k
R14 10k
C21 100p
R16 10k :RN
IC5 (2/2) NJM4560MD
C17 1000p
R21 4.7k
R15 10k :RN
C18 4.7 16V
C14 47 16V
CAPSTAN MOTOR DRIVER
Q1 2SD774
12V (M)
Q2 2SB1370
C1 0.01
C3 47 16V
R22 220
C22 0.047 :PT
R9 10k
R10 0.47 2W :RS
CN631
SS (5/5). 101-28 1 CAPSTAN FG (B) OUT
SS (5/5). 101-27 2 CAPSTAN FG GND IN
SS (5/5). 101-26 3 CAPSTAN FG (A) OUT
SS (1/5). 101-25 4 CAPSTAN FG Vcc IN
SS (5/5). 101-24 5 REG 12V IN
SS (1/5). 101-23 6 CAPSTAN ERROR IN
SS (5/5). 101-22 7 L:CAPSTAN FWD IN
SS (5/5). 101-21 8 CAPSTAN CURRENT OUT
SS (5/5). 101-20 9 12V (M) IN
SS (5/5). 101-19 10 12V (M) IN
SS (5/5). 101-18 11 12V (M) IN
SS (5/5). 101-17 12 GND (M) IN
SS (5/5). 101-16 13 GND (M) IN
SS (2/5). 101-15 14 T BRAKE SOL OFF IN
SS (2/5). 101-14 15 T BRAKE SOL ON IN
SS (5/5). 101-13 16 GND (M) IN
SS (1/5). 101-12 17 CAM LED Vcc IN
SS (1/5). 101-11 18 CAM MODE 3 OUT
SS (1/5). 101-10 19 CAM MODE 2 OUT
SS (1/5). 101-9 20 CAM MODE 1 OUT
SS (1/5). 101-8 21 GND IN
SS (1/5). 101-7 22 DRUM FG OUT
SS (1/5). 101-6 23 DRUM ERROR IN
SS (1/5). 101-5 24 DRUM PG (+) OUT
SS (1/5). 101-4 25 DRUM PG (−) OUT
SS (2/5). 101-3 26 GND IN
SS (2/5). 101-2 27 L:S-SENSOR OUT
SS (2/5). 101-1 28 ——
CN632
CAPSTAN FG (B) IN 9 CAPSTAN.M. 603-1
CAPSTAN FG GND 8 CAPSTAN.M. 603-2
CAPSTAN FG (A) IN 7 CAPSTAN.M. 603-3
CAPSTAN FG Vcc OUT 6 CAPSTAN.M. 603-4
CAPSTAN VS OUT 5 CAPSTAN.M. 603-5
REG 12V (M) OUT 4 CAPSTAN.M. 603-6
L:STAND-BY OUT 3 CAPSTAN.M. 603-7
L:CAPSTAN FWD OUT 2 CAPSTAN.M. 603-8
CAPSTAN MOTOR GND 1 CAPSTAN.M. 603-9
CN639
12V (M) OUT 10 DR-167. 637-10
12V (M) OUT 9 DR-167. 637-9
12V (M) OUT 8 DR-167. 637-8
T-BRAKE SOL. OFF OUT 7 DR-167. 637-7
T-BRAKE SOL. ON OUT 6 DR-167. 637-6
GND 5 DR-167. 637-5
CAM LED Vcc OUT 4 DR-167. 637-4
CAM MODE 3 IN 3 DR-167. 637-3
CAM MODE 2 IN 2 DR-167. 637-2
CAM MODE 1 IN 1 DR-167. 637-1
CN638
DRUM FG IN 8 DR-167. 636-8
DRUM ERROR OUT 7 DR-167. 636-7
DRUM PG (+) IN 6 DR-167. 636-6
DRUM PG (−) IN 5 DR-167. 636-5
GND 4 DR-167. 636-4
L:S-SENSOR IN 3 DR-167. 636-3
12V (M) OUT 2 DR-167. 636-2
12V (M) OUT 1 DR-167. 636-1
GND (M) 10 DR-167. 636-10
GND (M) 9 DR-167. 636-9

DR-176A
1-641-578-12 (1)
SVO-9620


CN631
CN632
CN638
DR-176
C14


A
B
C
D
DR-176
SONY
MADE IN JAPAN
CN639
CN632
R10
R12
C4
C5
R13
R21
R15
C18
R16
C21
C17
C16
C20
R11
C22

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

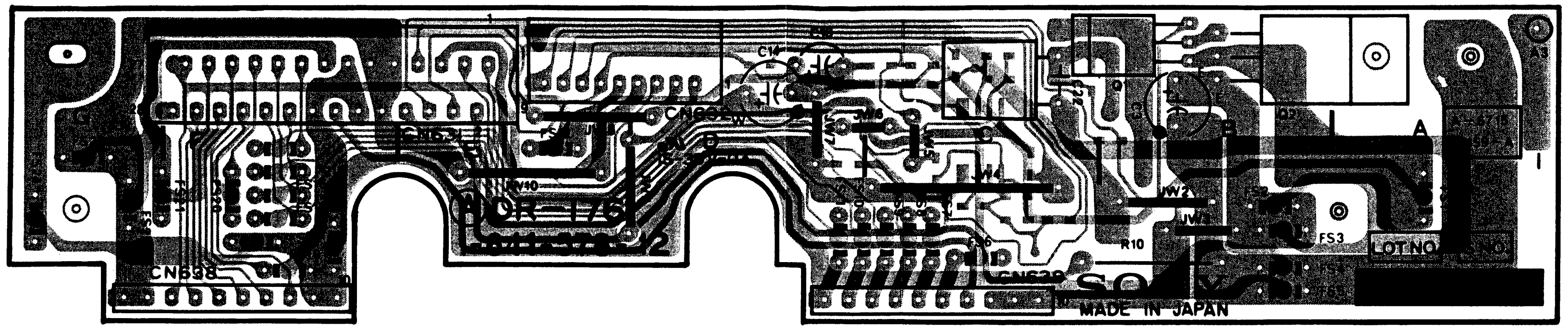
PSTAN.M. 603-1
PSTAN.M. 603-2
PSTAN.M. 603-3
PSTAN.M. 603-4
PSTAN.M. 603-5
PSTAN.M. 603-6
PSTAN.M. 603-7
PSTAN.M. 603-8
PSTAN.M. 603-9

-167. 637-10
-167. 637-9
-167. 637-8
-167. 637-7
-167. 637-6
-167. 637-5
-167. 637-4
-167. 637-3
-167. 637-2
-167. 637-1

-167. 636-8
-167. 636-7
-167. 636-6
-167. 636-5
-167. 636-4
-167. 636-3
-167. 636-2
-167. 636-1
-167. 636-10
-167. 636-9

1

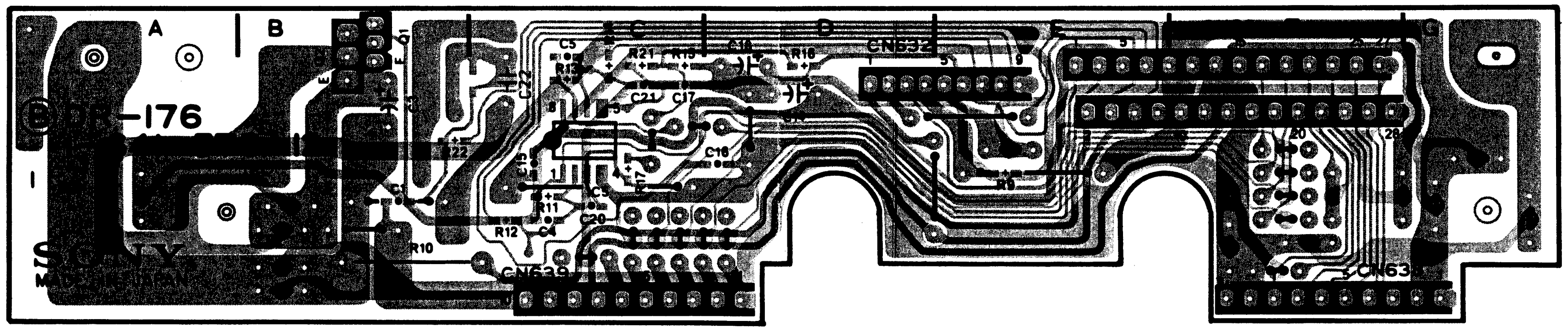
2


CN698
CN621
CN628
CN629
DR-176
R10
FS3
LOT NO.
A
SONY
MADE IN JAPAN

DR-176A — A SIDE —
1-641-578-12 (1)
SVO-9620

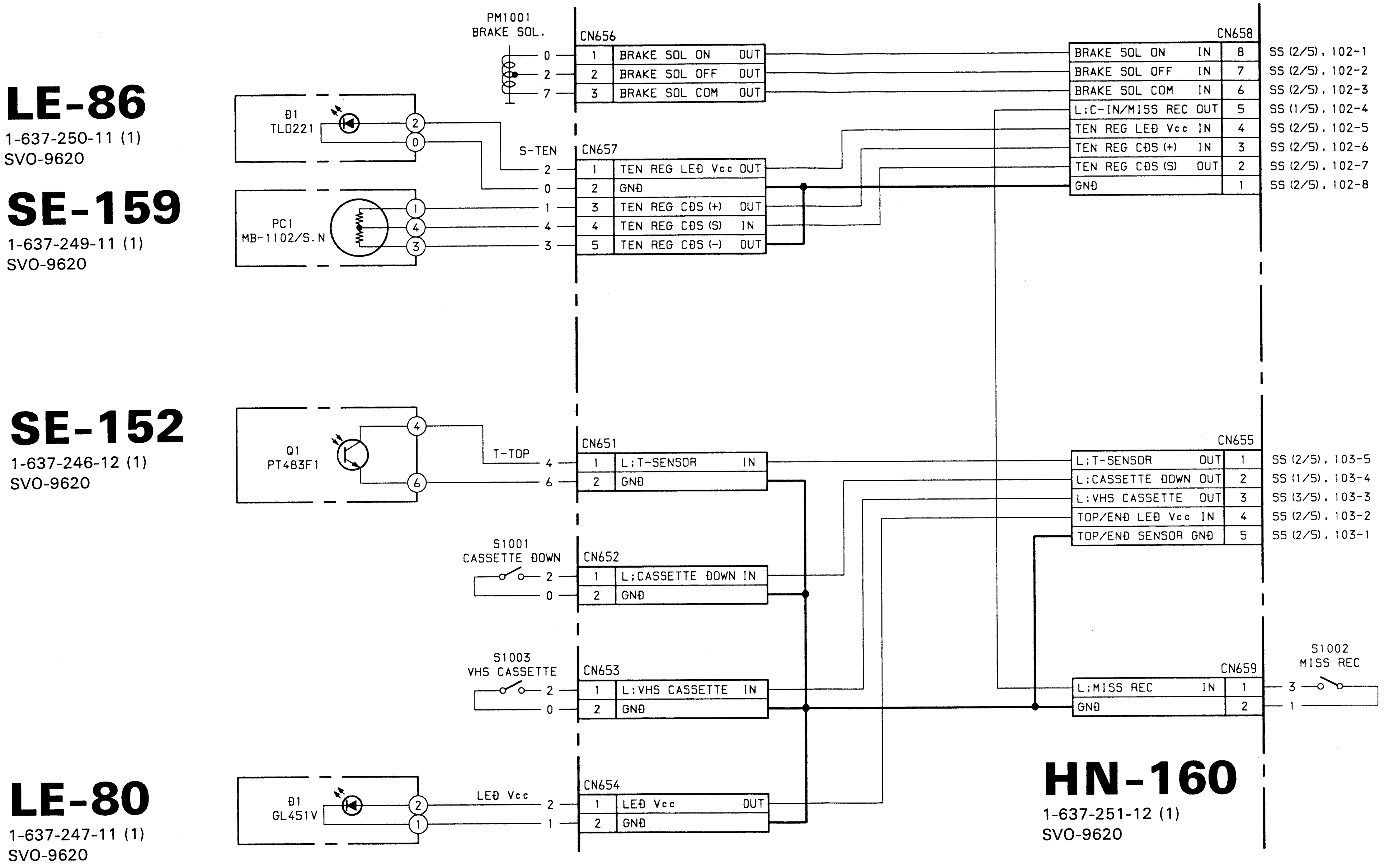
3

4


A
B
DR-176
C5
R21
R19
C21
C17
C16
R18
CN632
R12
C4
C20
R10
CN629
CN63
SONY
MADE IN JAPAN

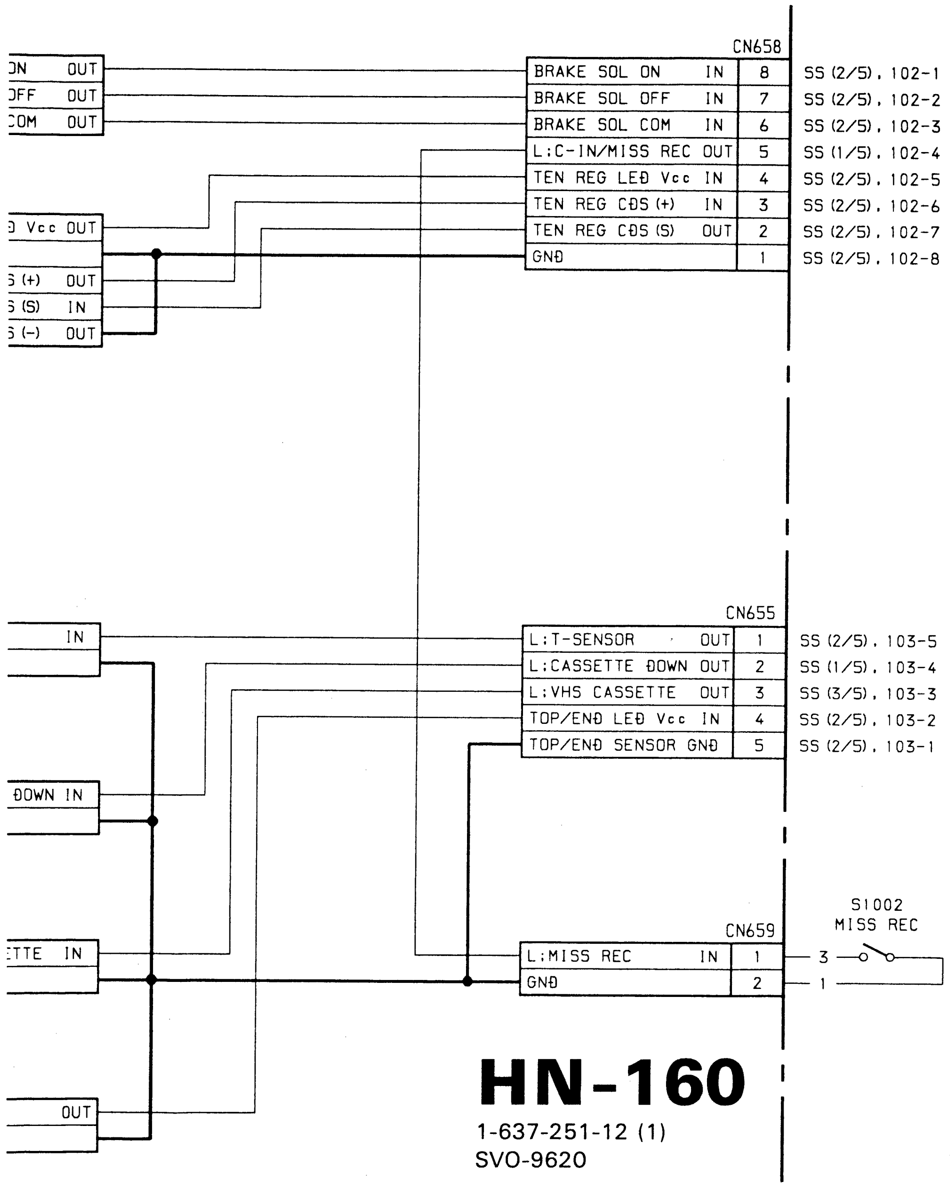
DR-176A — B SIDE —
1-641-578-12 (1)
SVO-9620

HN-160; CONNECTION
LE-80; TAPE TOP/END LED
LE-86; TENSION REGULATOR LED
SE-152; TAPE TOP SENSOR
SE-159; TENSION REGULATOR CDS DETECT

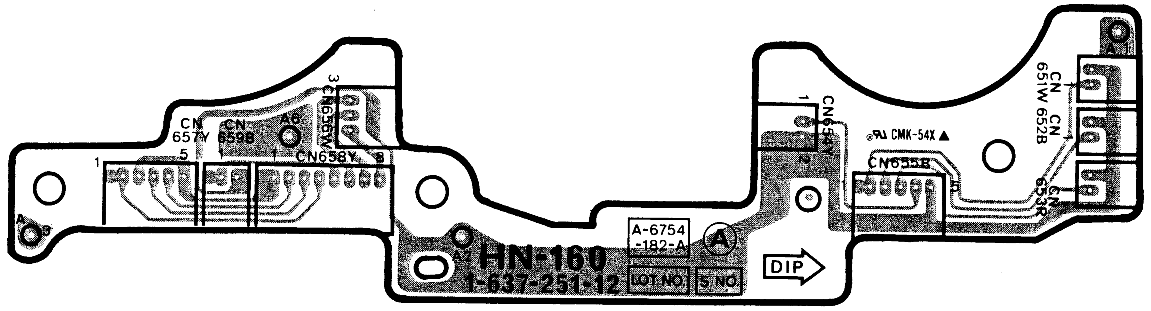

LE-86
1-637-250-11 (1)
SVO-9620
D1
TL0221
SE-159
1-637-249-11 (1)
SVO-9620
PC1
MB-1102/S.N
SE-152
1-637-246-12 (1)
SVO-9620
Q1
PT483F1
LE-80
1-637-247-11 (1)
SVO-9620
D1
GL451V
PM1001
BRAKE SOL.
S-TEN
T-TOP
S1001
CASSETTE DOWN
S1003
VHS CASSETTE
LED Vcc
CN656
1 BRAKE SOL ON OUT
2 BRAKE SOL OFF OUT
3 BRAKE SOL COM OUT
CN657
1 TEN REG LED Vcc OUT
2 GND
3 TEN REG CDS (+) OUT
4 TEN REG CDS (S) IN
5 TEN REG CDS (-) OUT
CN651
1 L:T-SENSOR IN
2 GND
CN652
1 L:CASSETTE DOWN IN
2 GND
CN653
1 L:VHS CASSETTE IN
2 GND
CN654
1 LED Vcc OUT
2 GND
CN658
BRAKE SOL ON IN 8 SS (2/5), 102-1
BRAKE SOL OFF IN 7 SS (2/5), 102-2
BRAKE SOL COM IN 6 SS (2/5), 102-3
L:C-IN/MISS REC OUT 5 SS (1/5), 102-4
TEN REG LED Vcc IN 4 SS (2/5), 102-5
TEN REG CDS (+) IN 3 SS (2/5), 102-6
TEN REG CDS (S) OUT 2 SS (2/5), 102-7
GND 1 SS (2/5), 102-8
CN655
L:T-SENSOR OUT 1 SS (2/5), 103-5
L:CASSETTE DOWN OUT 2 SS (1/5), 103-4
L:VHS CASSETTE OUT 3 SS (3/5), 103-3
TOP/END LED Vcc IN 4 SS (2/5), 103-2
TOP/END SENSOR GND 5 SS (2/5), 103-1
CN659
L:MISS REC IN 1
GND 2
S1002
MISS REC
HN-160
1-637-251-12 (1)
SVO-9620

CN651W
CN652B
CN653R
1-637-2

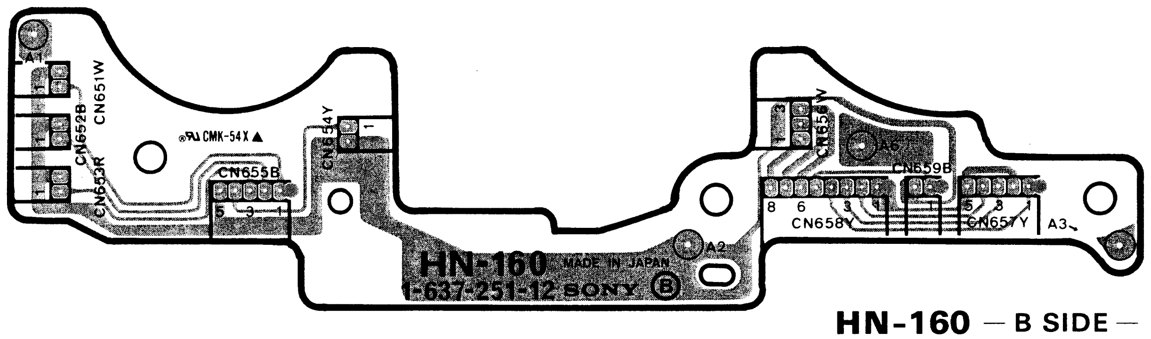
LE-86
1-637-2
SVO-962


CN658
BRAKE SOL ON IN 8 SS (2/5), 102-1
BRAKE SOL OFF IN 7 SS (2/5), 102-2
BRAKE SOL COM IN 6 SS (2/5), 102-3
L:C-IN/MISS REC OUT 5 SS (1/5), 102-4
TEN REG LED Vcc IN 4 SS (2/5), 102-5
TEN REG CDS (+) IN 3 SS (2/5), 102-6
TEN REG CDS (S) OUT 2 SS (2/5), 102-7
GND 1 SS (2/5), 102-8
ON OUT
OFF OUT
COM OUT
D Vcc OUT
S (+) OUT
S (S) IN
S (–) OUT
CN655
L:T-SENSOR OUT 1 SS (2/5), 103-5
L:CASSETTE DOWN OUT 2 SS (1/5), 103-4
L:VHS CASSETTE OUT 3 SS (3/5), 103-3
TOP/END LED Vcc IN 4 SS (2/5), 103-2
TOP/END SENSOR GND 5 SS (2/5), 103-1
IN
DOWN IN
TTE IN
OUT
CN659
L:MISS REC IN 1
GND 2
S1002
MISS REC
3
1

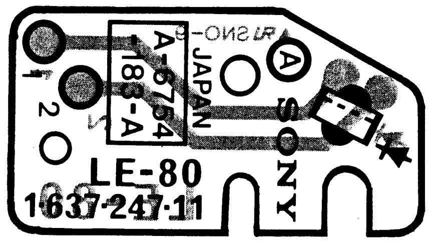
HN-160
1-637-251-12 (1)
SVO-9620


CN 657Y
CN 659B
CN656W
CN658Y
CN654Y
CN655B
CN 651W
CN 652B
CN 653R
CMK-54X
A-6754
-182-A
Ⓐ
HN-160
1-637-251-12
LOT NO.
S NO.
DIP

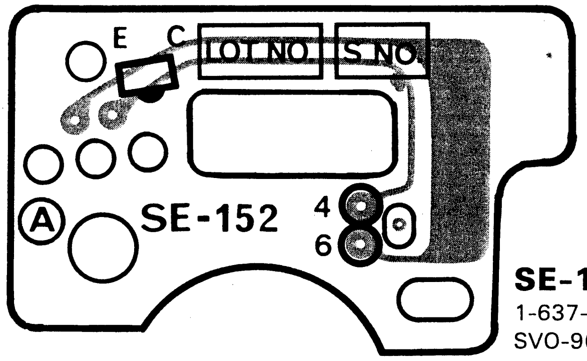
HN-160 — A SIDE —
1-637-251-12 (1)
SVO-9620


A1
CN651W
CN652B
CN653R
CMK-54X
CN654Y
CN655B
CN656W
CN659B
CN658Y
CN657Y
A2
A3
HN-160
1-637-251-12
MADE IN JAPAN
SONY
Ⓑ

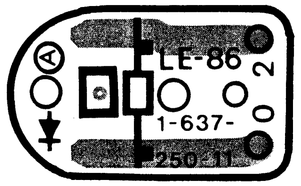
HN-160 — B SIDE —
1-637-251-12 (1)
SVO-9620


A-6754
-183-A
JAPAN
SONY
Ⓐ
1
2
LE-80
1637-247-11

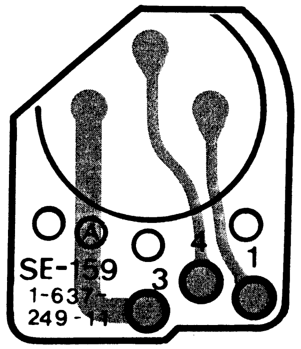
LE-80 — A SIDE —
1-637-247-11 (1)
SVO-9620


E
C
LOT NO
S NO
Ⓐ
SE-152
4
6

SE-152 — A SIDE —
1-637-246-12 (1)
SVO-9620

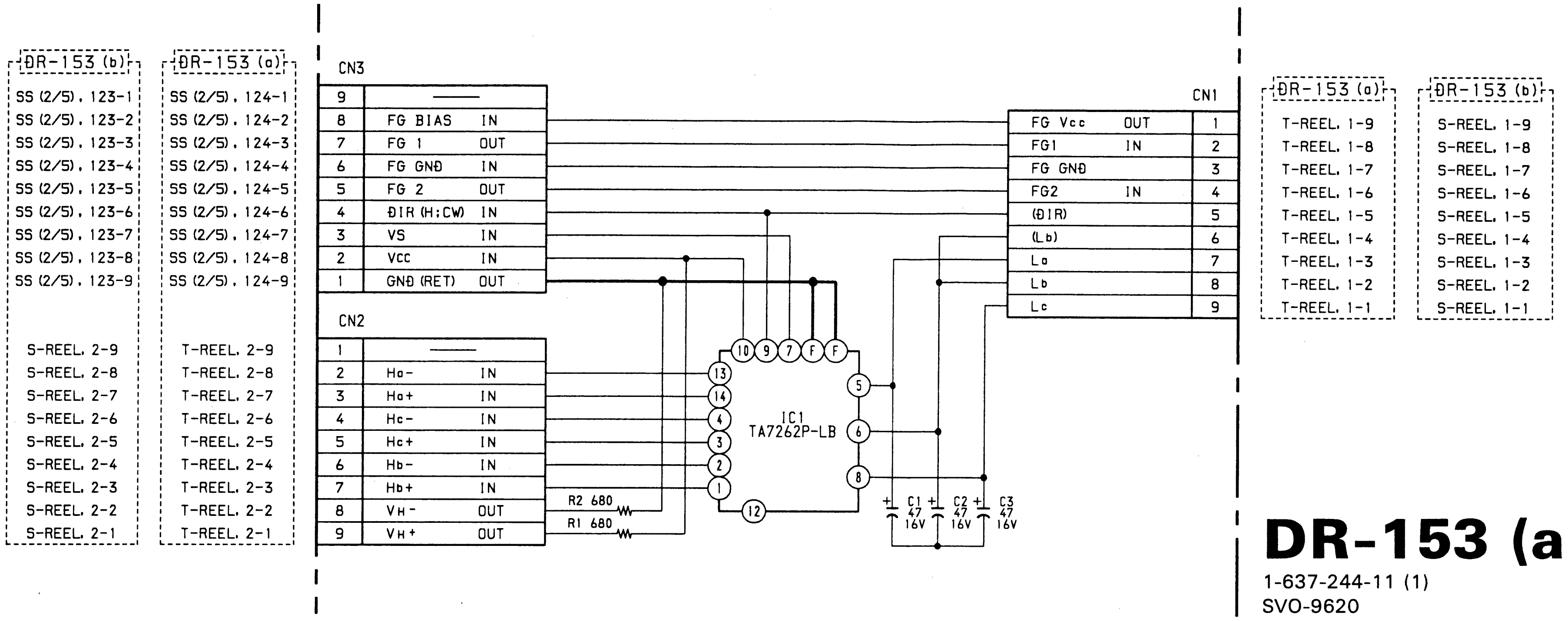

Ⓐ
LE-86
1-637-
250-11
2
0

LE-86 — A SIDE —
1-637-250-11 (1)
SVO-9620

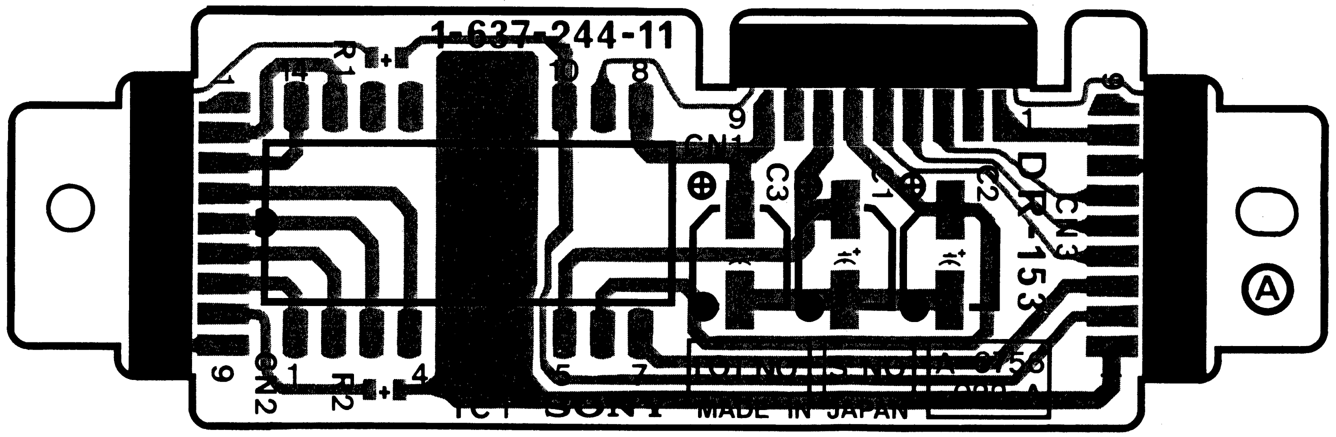

Ⓐ
SE-159
1-637
249-11
3
4
1

SE-159 — A SIDE —
1-637-249-11 (1)
SVO-9620

DR-153 (a), (b) ; T REEL, S REEL DRIVER

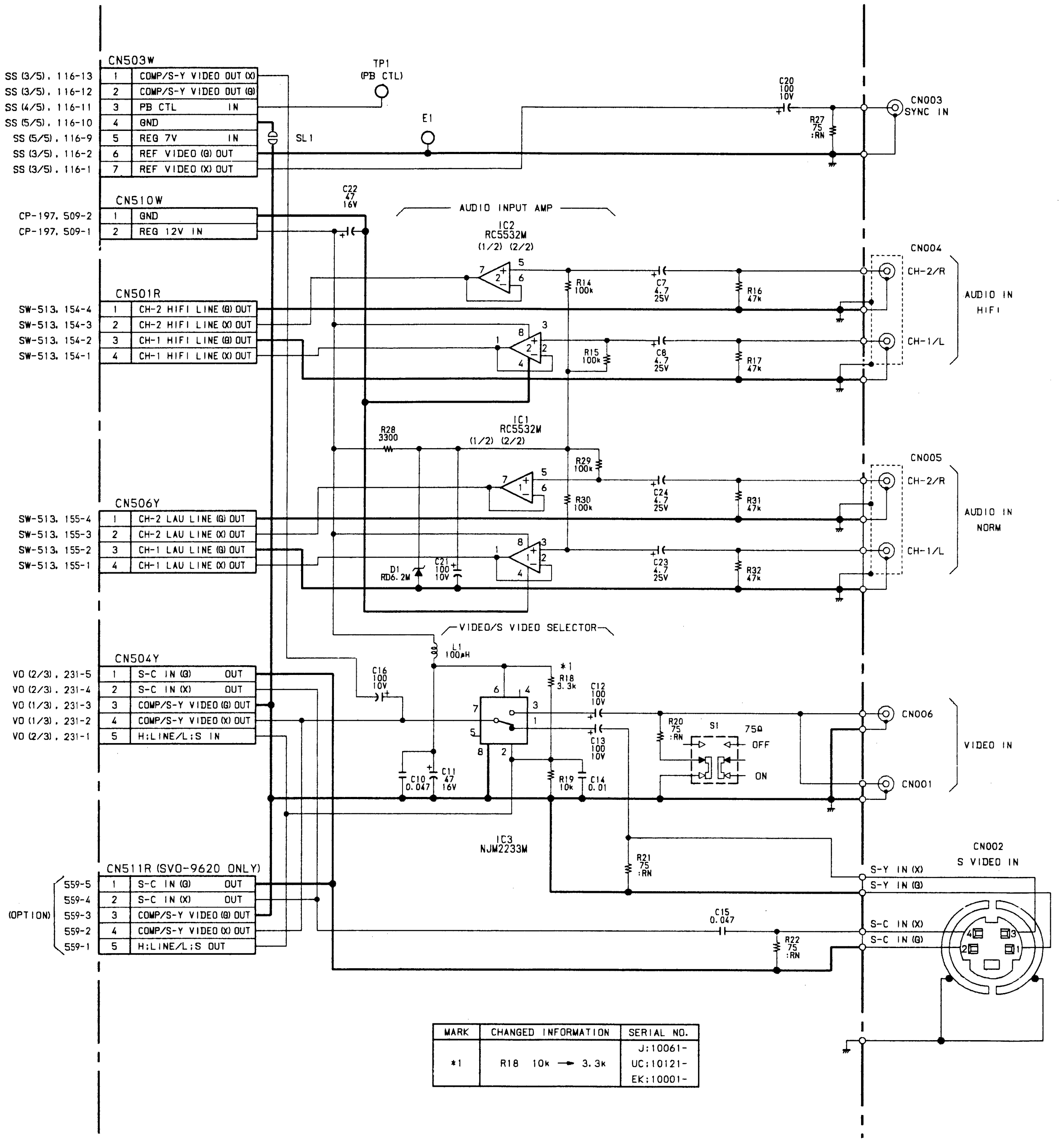

DR-153 (b)
SS (2/5), 123-1
SS (2/5), 123-2
SS (2/5), 123-3
SS (2/5), 123-4
SS (2/5), 123-5
SS (2/5), 123-6
SS (2/5), 123-7
SS (2/5), 123-8
SS (2/5), 123-9
S-REEL, 2-9
S-REEL, 2-8
S-REEL, 2-7
S-REEL, 2-6
S-REEL, 2-5
S-REEL, 2-4
S-REEL, 2-3
S-REEL, 2-2
S-REEL, 2-1
DR-153 (a)
SS (2/5), 124-1
SS (2/5), 124-2
SS (2/5), 124-3
SS (2/5), 124-4
SS (2/5), 124-5
SS (2/5), 124-6
SS (2/5), 124-7
SS (2/5), 124-8
SS (2/5), 124-9
T-REEL, 2-9
T-REEL, 2-8
T-REEL, 2-7
T-REEL, 2-6
T-REEL, 2-5
T-REEL, 2-4
T-REEL, 2-3
T-REEL, 2-2
T-REEL, 2-1
CN3
9
8 FG BIAS IN
7 FG 1 OUT
6 FG GND IN
5 FG 2 OUT
4 DIR (H:CW) IN
3 VS IN
2 VCC IN
1 GND (RET) OUT
CN2
1
2 Ha- IN
3 Ha+ IN
4 Hc- IN
5 Hc+ IN
6 Hb- IN
7 Hb+ IN
8 VH- OUT
9 VH+ OUT
R2 680
R1 680
10 9 7 F F
13 14 4 3 2 1 12
5 6 8
IC1
TA7262P-LB
C1 47 16V
C2 47 16V
C3 47 16V
CN1
FG Vcc OUT 1
FG1 IN 2
FG GND 3
FG2 IN 4
(DIR) 5
(Lb) 6
La 7
Lb 8
Lc 9
DR-153 (a)
T-REEL, 1-9
T-REEL, 1-8
T-REEL, 1-7
T-REEL, 1-6
T-REEL, 1-5
T-REEL, 1-4
T-REEL, 1-3
T-REEL, 1-2
T-REEL, 1-1
DR-153 (b)
S-REEL, 1-9
S-REEL, 1-8
S-REEL, 1-7
S-REEL, 1-6
S-REEL, 1-5
S-REEL, 1-4
S-REEL, 1-3
S-REEL, 1-2
S-REEL, 1-1

DR-153 (a), (b)
1-637-244-11 (1)
SVO-9620


1-637-244-11
R1
14
10
8
1
9
CN1
C3
C1
C2
DR-153
CN3
1
9
CN2
R2
4
5
7
IC1
SONY
MADE IN JAPAN
Ⓐ

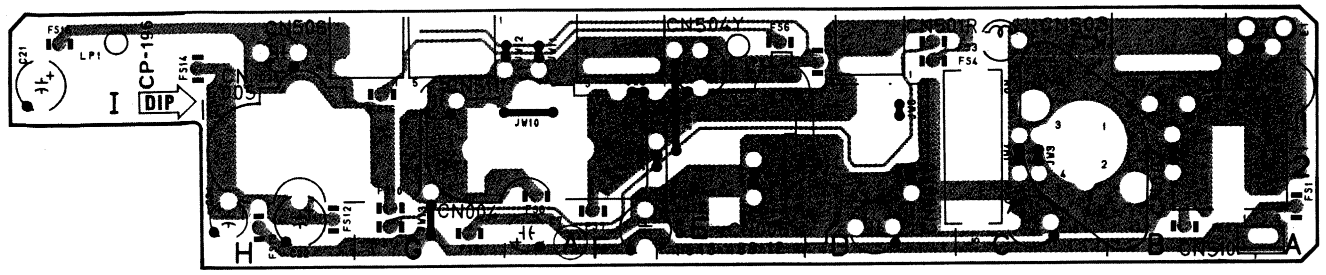
DR-153 (a), (b) — A SIDE —
1-637-244-11 (1)
SVO-9620

CP-196 : CONNECTION OF REAR CONNECTOR

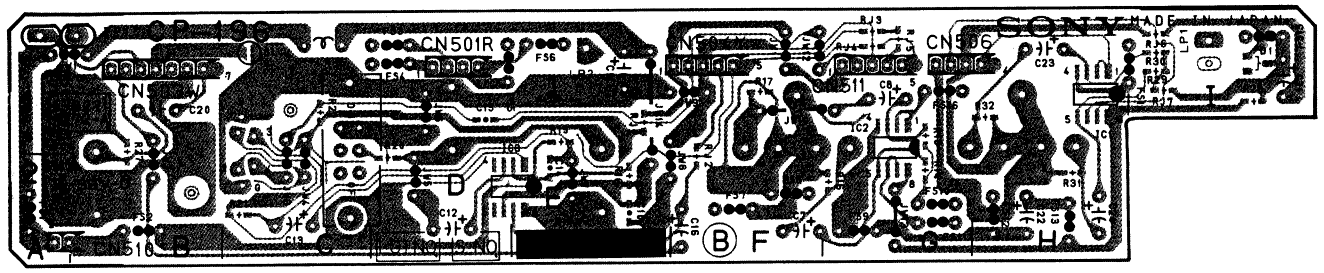

CN503W
SS (3/5), 116-13 1 COMP/S-Y VIDEO OUT (X)
SS (3/5), 116-12 2 COMP/S-Y VIDEO OUT (G)
SS (4/5), 116-11 3 PB CTL IN
SS (5/5), 116-10 4 GND
SS (5/5), 116-9 5 REG 7V IN
SS (3/5), 116-2 6 REF VIDEO (G) OUT
SS (3/5), 116-1 7 REF VIDEO (X) OUT
SL1
TP1 (PB CTL)
E1
CN510W
CP-197, 509-2 1 GND
CP-197, 509-1 2 REG 12V IN
C22 47 16V
AUDIO INPUT AMP
IC2 RC5532M (1/2) (2/2)
CN501R
SW-513, 154-4 1 CH-2 HIFI LINE (G) OUT
SW-513, 154-3 2 CH-2 HIFI LINE (X) OUT
SW-513, 154-2 3 CH-1 HIFI LINE (G) OUT
SW-513, 154-1 4 CH-1 HIFI LINE (X) OUT
R14 100k
R15 100k
C7 4.7 25V
C8 4.7 25V
R16 47k
R17 47k
C20 100 10V
R27 75 :RN
CN003 SYNC IN
CN004
CH-2/R
CH-1/L
AUDIO IN HIFI
R28 3300
IC1 RC5532M (1/2) (2/2)
R29 100k
R30 100k
C24 4.7 25V
C23 4.7 25V
R31 47k
R32 47k
CN005
CH-2/R
CH-1/L
AUDIO IN NORM
CN506Y
SW-513, 155-4 1 CH-2 LAU LINE (G) OUT
SW-513, 155-3 2 CH-2 LAU LINE (X) OUT
SW-513, 155-2 3 CH-1 LAU LINE (G) OUT
SW-513, 155-1 4 CH-1 LAU LINE (X) OUT
D1 RD6.2M
C21 100 10V
VIDEO/S VIDEO SELECTOR
L1 100μH
C16 100 10V
*1 R18 3.3k
C12 100 10V
C13 100 10V
R20 75 :RN
S1
75Ω
OFF
ON
CN006
CN001
VIDEO IN
CN504Y
VO (2/3), 231-5 1 S-C IN (G) OUT
VO (2/3), 231-4 2 S-C IN (X) OUT
VO (1/3), 231-3 3 COMP/S-Y VIDEO (G) OUT
VO (1/3), 231-2 4 COMP/S-Y VIDEO (X) OUT
VO (2/3), 231-1 5 H:LINE/L:S IN
C10 0.047
C11 47 16V
R19 10k
C14 0.01
IC3 NJM2233M
R21 75 :RN
CN002 S VIDEO IN
S-Y IN (X)
S-Y IN (G)
S-C IN (X)
S-C IN (G)
C15 0.047
R22 75 :RN
CN511R (SVO-9620 ONLY)
(OPTION) 559-5 1 S-C IN (G) OUT
559-4 2 S-C IN (X) OUT
559-3 3 COMP/S-Y VIDEO (G) OUT
559-2 4 COMP/S-Y VIDEO (X) OUT
559-1 5 H:LINE/L:S OUT

MARK	CHANGED INFORMATION	SERIAL NO.
*1	R18 10k → 3.3k	J:10061- UC:10121- EK:10001-

CP-196
1-643-489-12 (1)
SVO-9620

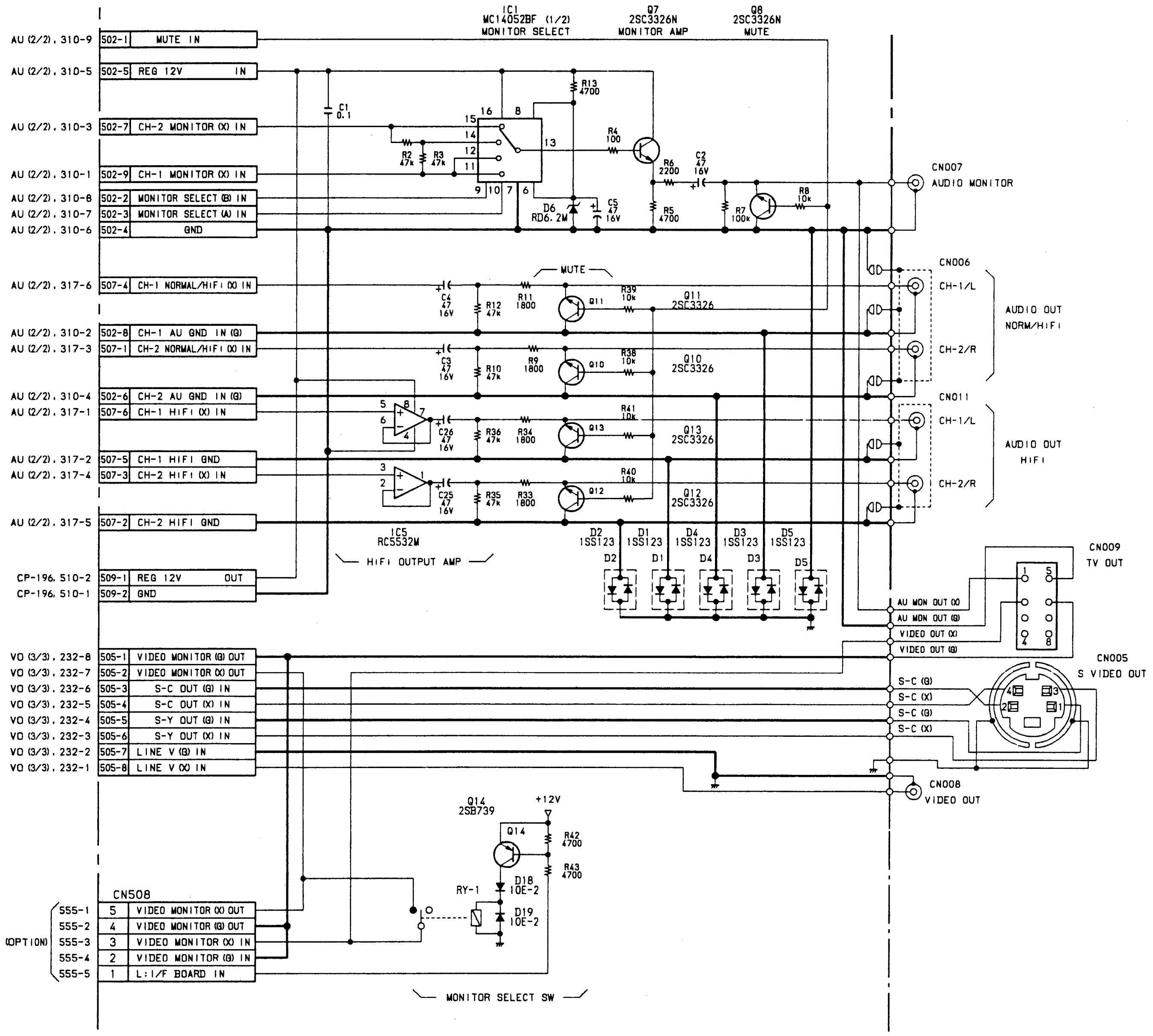

CN503W
CN507/Y
CN501R
CN002
JW10
DIP
I
H
D
C
B
A
LP1
C21
F56
F54
F51

CP-196 — A SIDE —
1-643-489-12 (1)
SVO-9620

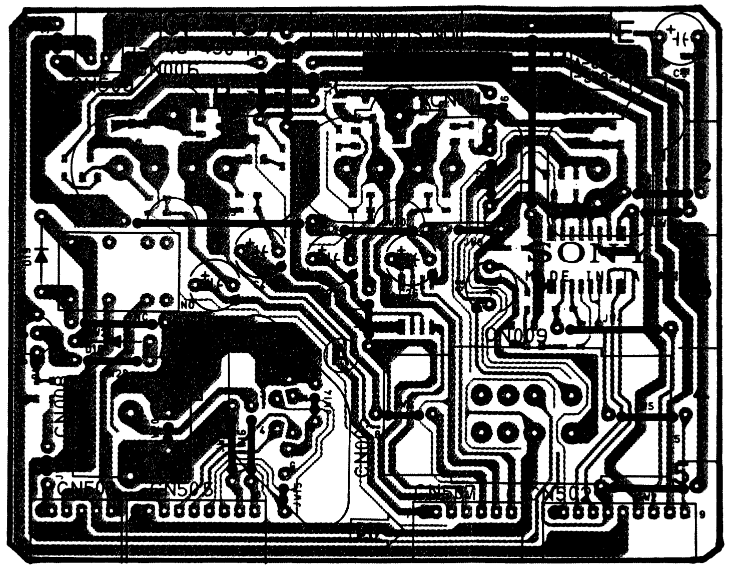

CP-196
CN501R
CN506
SONY
MADE IN JAPAN
F56
C20
C23
C12
C13
C8
C2
C1
IC1
R31
LP1
A
B
C
D
E
F
G
H

CP-196 — B SIDE —
1-643-489-12 (1)
SVO-9620

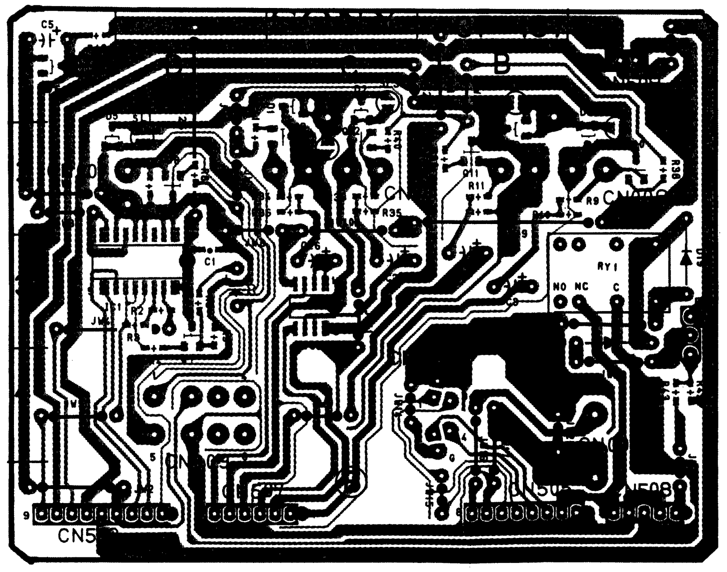
CP-197; CONNECTION OF REAR CONNECTOR


AU (2/2), 310-9 | 502-1 | MUTE IN
AU (2/2), 310-5 | 502-5 | REG 12V IN
AU (2/2), 310-3 | 502-7 | CH-2 MONITOR (X) IN
AU (2/2), 310-1 | 502-9 | CH-1 MONITOR (X) IN
AU (2/2), 310-8 | 502-2 | MONITOR SELECT (B) IN
AU (2/2), 310-7 | 502-3 | MONITOR SELECT (A) IN
AU (2/2), 310-6 | 502-4 | GND
AU (2/2), 317-6 | 507-4 | CH-1 NORMAL/HIFI (X) IN
AU (2/2), 310-2 | 502-8 | CH-1 AU GND IN (G)
AU (2/2), 317-3 | 507-1 | CH-2 NORMAL/HIFI (X) IN
AU (2/2), 310-4 | 502-6 | CH-2 AU GND IN (G)
AU (2/2), 317-1 | 507-6 | CH-1 HIFI (X) IN
AU (2/2), 317-2 | 507-5 | CH-1 HIFI GND
AU (2/2), 317-4 | 507-3 | CH-2 HIFI (X) IN
AU (2/2), 317-5 | 507-2 | CH-2 HIFI GND
CP-196, 510-2 | 509-1 | REG 12V OUT
CP-196, 510-1 | 509-2 | GND
VO (3/3), 232-8 | 505-1 | VIDEO MONITOR (G) OUT
VO (3/3), 232-7 | 505-2 | VIDEO MONITOR (X) OUT
VO (3/3), 232-6 | 505-3 | S-C OUT (G) IN
VO (3/3), 232-5 | 505-4 | S-C OUT (X) IN
VO (3/3), 232-4 | 505-5 | S-Y OUT (G) IN
VO (3/3), 232-3 | 505-6 | S-Y OUT (X) IN
VO (3/3), 232-2 | 505-7 | LINE V (G) IN
VO (3/3), 232-1 | 505-8 | LINE V (X) IN
CN508
(OPTION) 555-1 | 5 | VIDEO MONITOR (X) OUT
555-2 | 4 | VIDEO MONITOR (G) OUT
555-3 | 3 | VIDEO MONITOR (X) IN
555-4 | 2 | VIDEO MONITOR (G) IN
555-5 | 1 | L: I/F BOARD IN
IC1 MC14052BF (1/2) MONITOR SELECT
Q7 2SC3326N MONITOR AMP
Q8 2SC3326N MUTE
C1 0.1
R2 47k
R3 47k
R13 4700
R4 100
R6 2200
C2 47 16V
D6 RD6.2M
C5 47 16V
R5 4700
R7 100k
R8 10k
CN007 AUDIO MONITOR
MUTE
C4 47 16V
R12 47k
R11 1800
R39 10k
Q11 2SC3326
C3 47 16V
R10 47k
R9 1800
R38 10k
Q10 2SC3326
C26 47 16V
R36 47k
R34 1800
R41 10k
Q13 2SC3326
C25 47 16V
R35 47k
R33 1800
R40 10k
Q12 2SC3326
IC5 RC5532M
HIFI OUTPUT AMP
CN006 CH-1/L CH-2/R AUDIO OUT NORM/HIFI
CN011 CH-1/L CH-2/R AUDIO OUT HIFI
D2 1SS123
D1 1SS123
D4 1SS123
D3 1SS123
D5 1SS123
CN009 TV OUT
AU MON OUT (X)
AU MON OUT (G)
VIDEO OUT (X)
VIDEO OUT (G)
CN005 S VIDEO OUT
S-C (G)
S-C (X)
S-C (G)
S-C (X)
CN008 VIDEO OUT
Q14 2SB739
+12V
R42 4700
R43 4700
RY-1
D18 10E-2
D19 10E-2
MONITOR SELECT SW

CP-197
1-643-490-11 (1)
SVO-9620

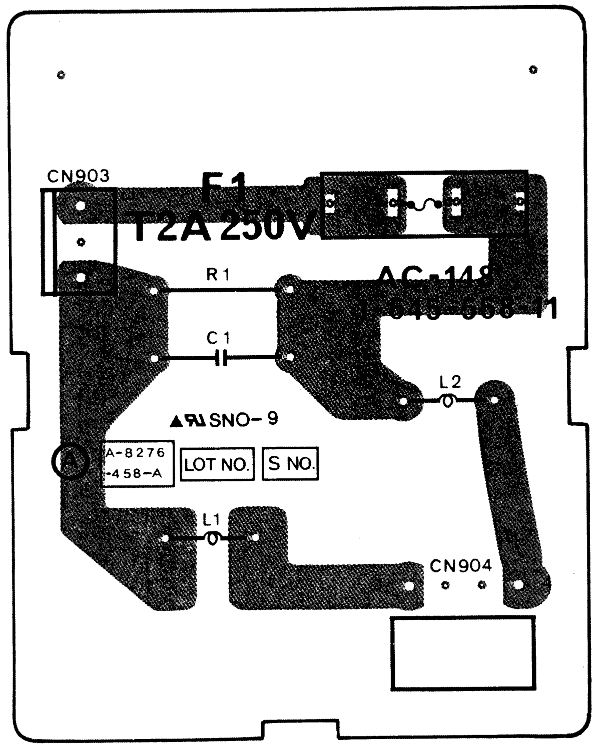


CP-197 — A SIDE —
1-643-490-11 (1)
SVO-9620

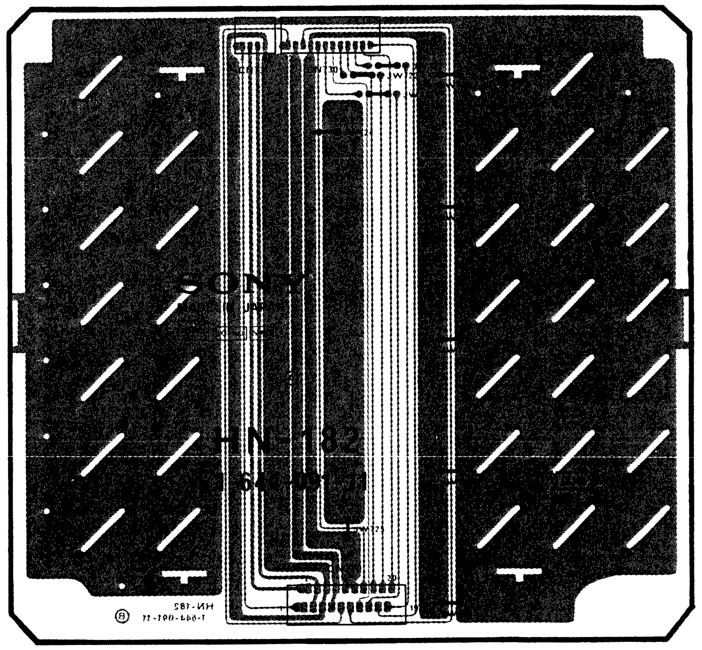


CP-197 — B SIDE —
1-643-490-11 (1)
SVO-9620

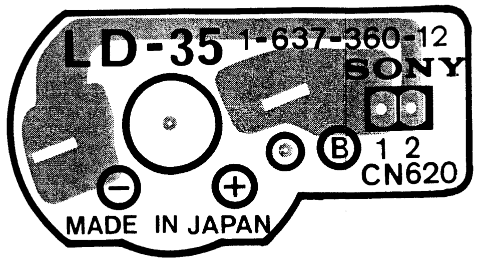
AC-148;	AC INPUT
CM-14;	CASSETTE COMPARTMENT MOTOR
HN-182;	CONNECTION (SERVO)
LD-35;	LOADING MOTOR
SW-514A;	SELECT SWITCH
SW-532;	TIMER REC/TIMER PLAY SWITCH


CN903
F1
T2A 250V
AC-148
1-645-568-11
R1
C1
L2
SNO-9
A
A-8276
-458-A
LOT NO.
S NO.
L1
CN904

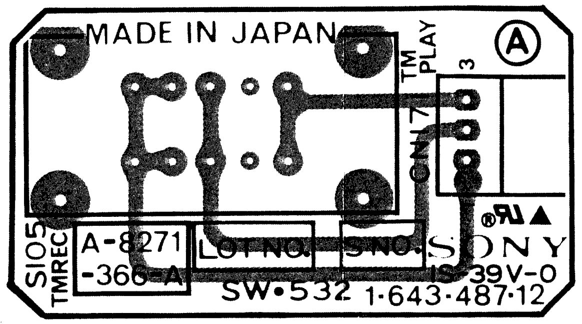
AC-148 — A SIDE —
1-645-568-11 (1)
SVO-9620


SONY
HN-182
1-644-091-11

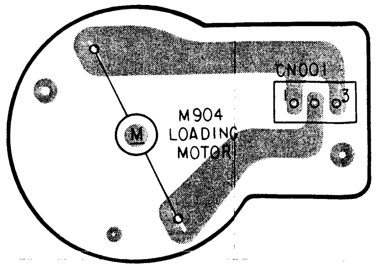
HN-182 — A SIDE —
1-644-091-11 (1)
SVO-9620


LD-35
1-637-360-12
SONY
B
1 2
CN620
MADE IN JAPAN

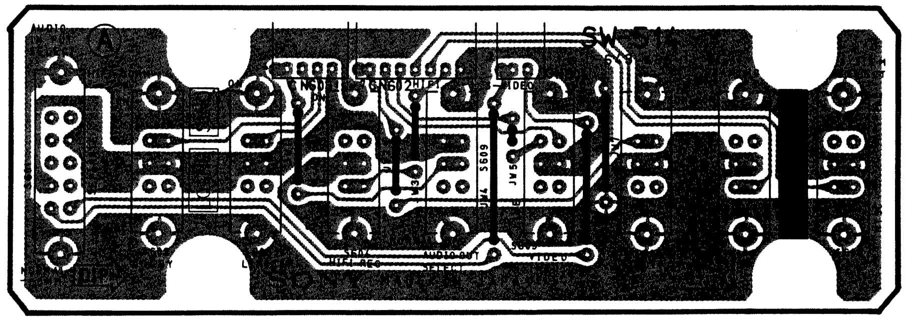
LD-35 — B SIDE —
1-637-360-12 (1)
SVO-9620


MADE IN JAPAN
TM PLAY
A
3
CN 7
S105
TMREC
A-8271
-360-A
LOT NO.
S NO.
SONY
S-39V-0
SW-532
1-643-487-12

SW-532 — A SIDE —
1-643-487-11, 12 (1)
SVO-9620


CN001
3
M904
LOADING
MOTOR
M

CM-14 — B SIDE —
1-630-505-21 (1)
SVO-9620

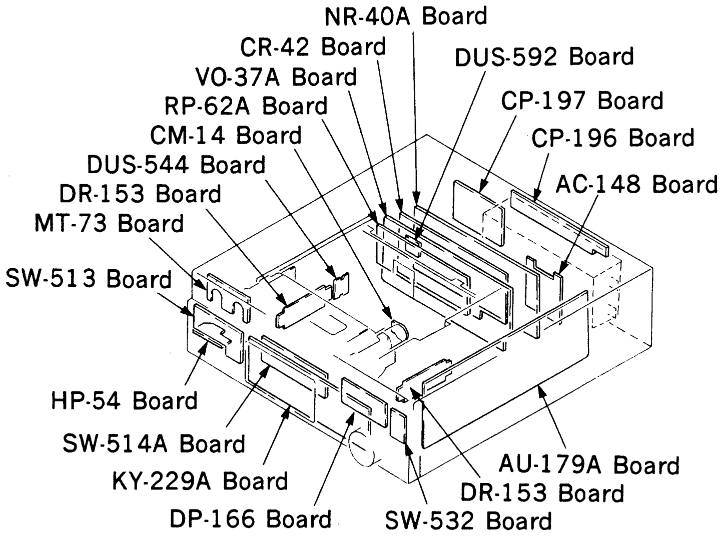

AUDIO
A
SW-514

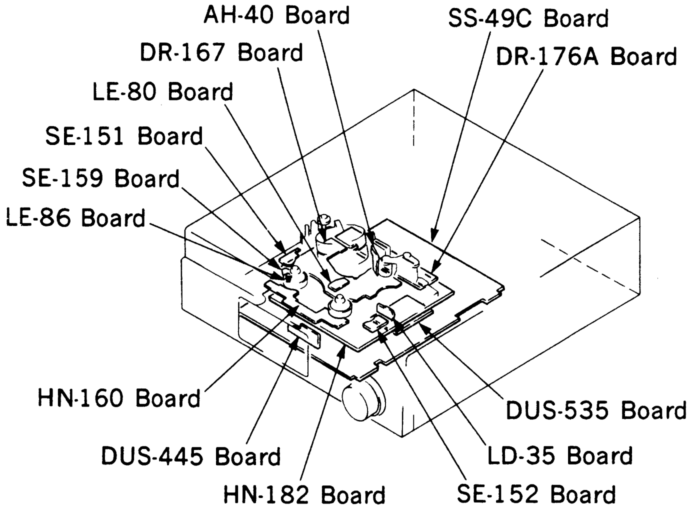
SW-514A — A SIDE —
1-643-486-11 (1)
SVO-9620

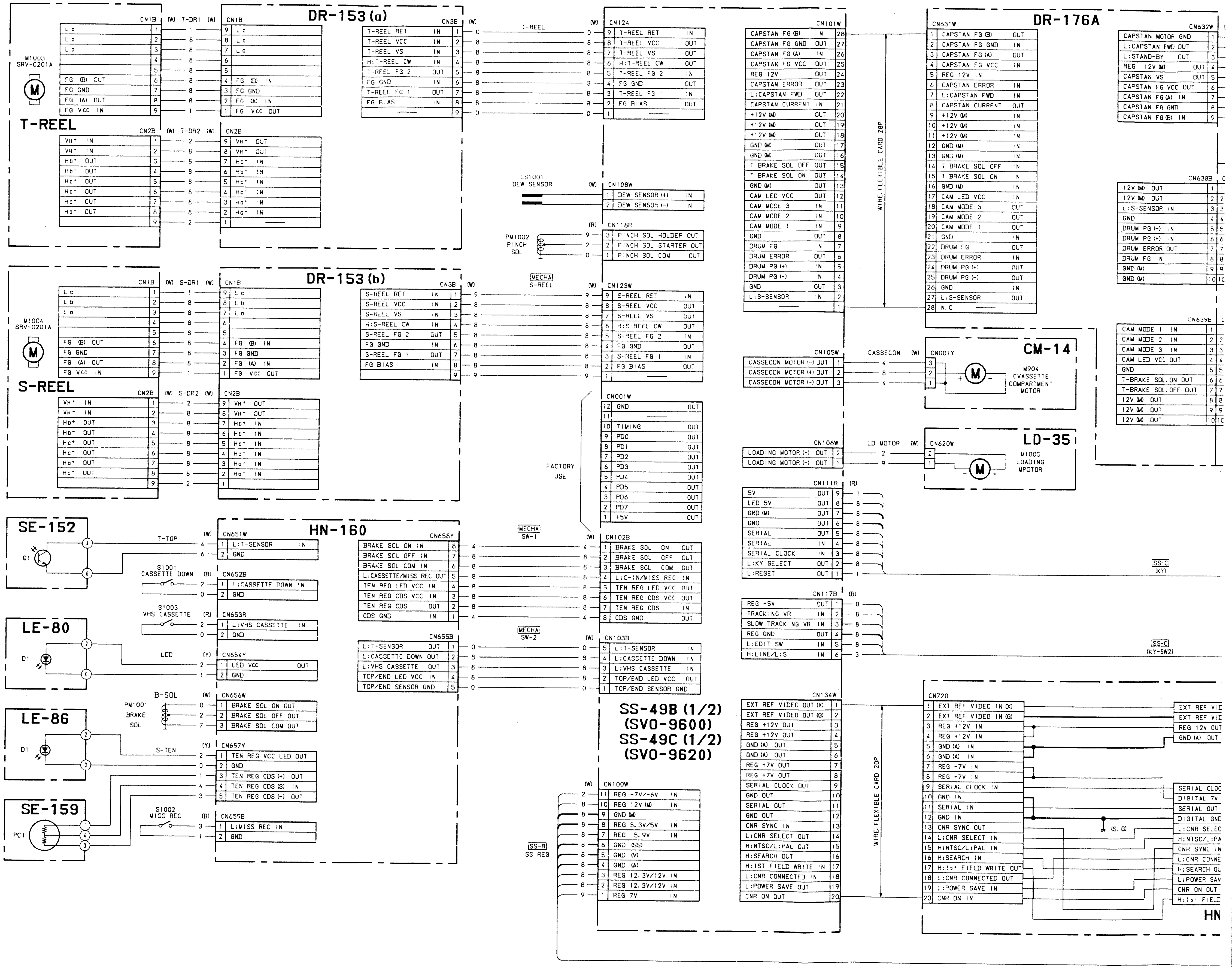
FRAME (1/2), AC-148, CM-14, HN-182, LD-35, SW-514A, SW-532

FRAME (1/2), AC-148, CM-14, HN-182, LD-35, SW-514A, SW-532

FRAME (1/2)
AC-148; AC INPUT
CM-14; CASSETTE COMPARTMENT MOTOR
HN-182; CONNECTION (SERVO)
LD-35; LOADING MOTOR
SW-514A ;SELECT SWITCH
SW-532; TIMER REC/TIMER PLAY SWITCH

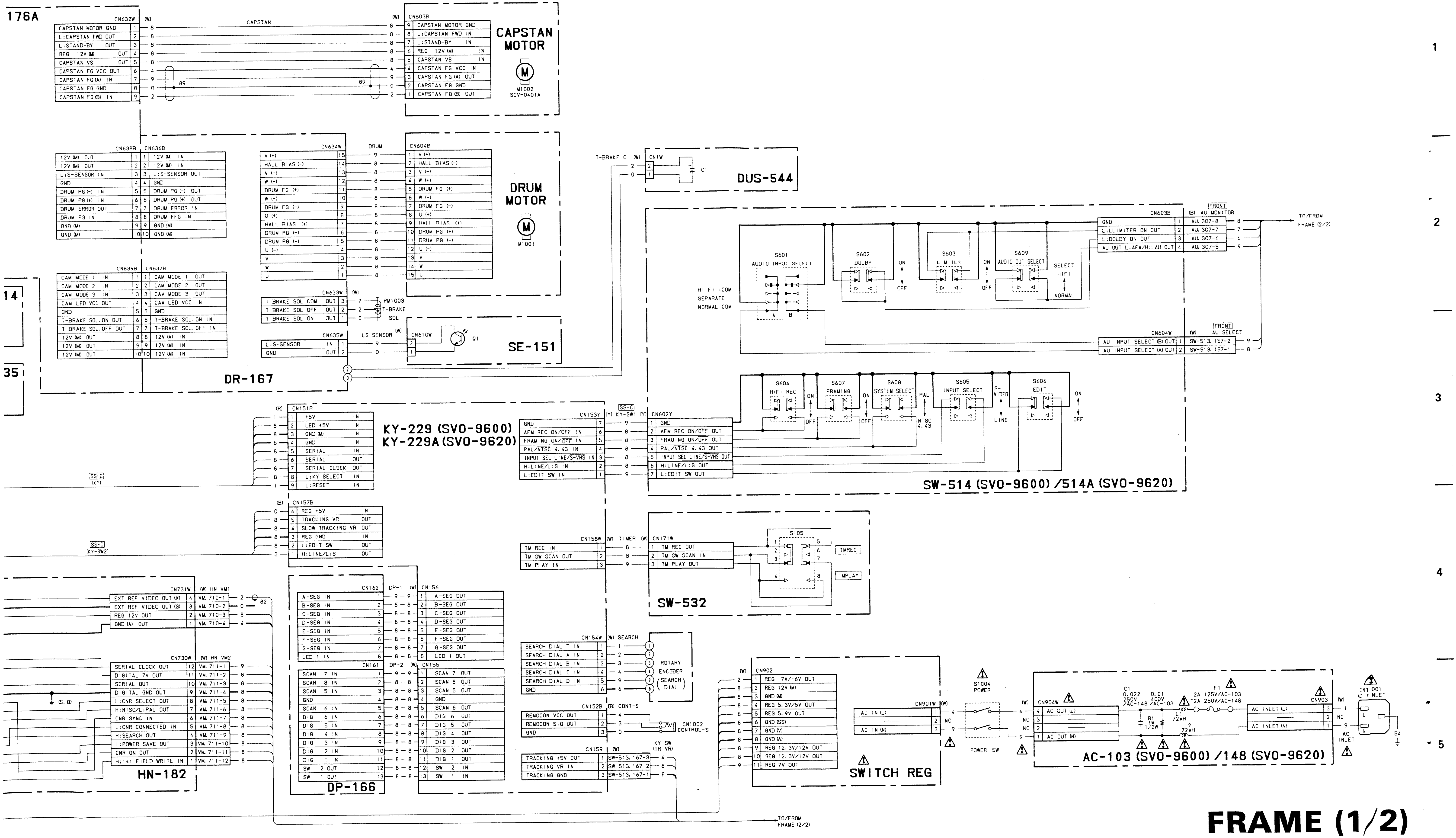

NR-40A Board
CR-42 Board
DUS-592 Board
VO-37A Board
RP-62A Board
CP-197 Board
CM-14 Board
CP-196 Board
DUS-544 Board
AC-148 Board
DR-153 Board
MT-73 Board
SW-513 Board
HP-54 Board
SW-514A Board
KY-229A Board
AU-179A Board
DR-153 Board
DP-166 Board
SW-532 Board


AH-40 Board
SS-49C Board
DR-167 Board
DR-176A Board
LE-80 Board
SE-151 Board
SE-159 Board
LE-86 Board
HN-160 Board
DUS-535 Board
DUS-445 Board
LD-35 Board
HN-182 Board
SE-152 Board


DR-153 (a)
T-REEL
M1003
SRV-0201A
DR-153 (b)
S-REEL
M1004
SRV-0201A
SE-152
LE-80
LE-86
SE-159
HN-160
S1001
CASSETTE DOWN
S1003
VHS CASSETTE
S1002
MISS REC
PM1001
BRAKE SOL
CS1001
DEW SENSOR
PM1002
PINCH SOL
FACTORY USE
SS-49B (1/2)
(SVO-9600)
SS-49C (1/2)
(SVO-9620)
DR-176A
CM-14
M904
CASSETTE COMPARTMENT MOTOR
LD-35
M1005
LOADING MOTOR
WIRE, FLEXIBLE CARD 28P
WIRE, FLEXIBLE CARD 20P
CASSECON
LD MOTOR
SS-C (KY)
SS-C (KY-SW2)
SS-R SS REG
MECHA S-REEL
MECHA SW-1
MECHA SW-2
HN

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

FRAME (1/2), AC-148, CM-14, HN-182, LD-35, SW-514A, SW-532


176A
CN632W
CAPSTAN MOTOR GND
L:CAPSTAN FWD OUT
L:STAND-BY OUT
REG 12V (M) OUT
CAPSTAN VS OUT
CAPSTAN FG VCC OUT
CAPSTAN FG (A) IN
CAPSTAN FG GND
CAPSTAN FG (B) IN
CAPSTAN
CN603B
CAPSTAN MOTOR
M1002
SCV-0401A
CN638B
CN636B
L:S-SENSOR IN
DRUM PG (-) IN
DRUM PG (+) IN
DRUM ERROR OUT
DRUM FG IN
CN634W
DRUM
CN604B
HALL BIAS (-)
HALL BIAS (+)
DRUM FG (+)
DRUM FG (-)
DRUM PG (+)
DRUM PG (-)
DRUM MOTOR
M1001
CN639B
CN637B
CAM MODE 1
CAM MODE 2
CAM MODE 3
CAM LED VCC
T-BRAKE SOL.ON OUT
T-BRAKE SOL.OFF OUT
CN633W
T BRAKE SOL COM
T BRAKE SOL OFF
T BRAKE SOL ON
PM1003
T-BRAKE SOL
CN635W
LS SENSOR
CN610W
Q1
SE-151
DR-167
14
35
T-BRAKE C
CN1W
C1
DUS-544
CN603B
FRONT
AU MONITOR
GND
L:LIMITER ON OUT
L:DOLBY ON OUT
AU OUT L:AFM/H:LAU OUT
AU 307-8
AU 307-7
AU 307-6
AU 307-5
TO/FROM FRAME (2/2)
S601 AUDIO INPUT SELECT
S602 DOLBY
S603 LIMITER
S609 AUDIO OUT SELECT
HI FI :COM
SEPARATE
NORMAL COM
SELECT HIFI NORMAL
ON OFF
CN604W
AU INPUT SELECT (B) OUT
AU INPUT SELECT (A) OUT
AU SELECT
SW-513 157-2
SW-513 157-1
S604 HiFi REC
S607 FRAMING
S608 SYSTEM SELECT
S605 INPUT SELECT
S606 EDIT
PAL
NTSC 4.43
S-VIDEO
LINE
CN151R
+5V
LED +5V
GND (M)
SERIAL
SERIAL CLOCK OUT
L:KY SELECT IN
L:RESET IN
KY-229 (SVO-9600)
KY-229A (SVO-9620)
SS-C (KY)
CN153Y
KY-SW1
CN602Y
AFM REC ON/OFF
FRAMING ON/OFF
PAL/NTSC 4.43
INPUT SEL LINE/S-VHS
H:LINE/L:S
L:EDIT SW
SW-514 (SVO-9600) /514A (SVO-9620)
CN157B
REG +5V
TRACKING VR OUT
SLOW TRACKING VR OUT
REG GND
L:EDIT SW OUT
H:LINE/L:S OUT
SS-C (KY-SW2)
CN158W
TIMER
CN171W
TM REC
TM SW SCAN
TM PLAY
S105
TMREC
TMPLAY
SW-532
CN731W
HN VM1
EXT REF VIDEO OUT (X)
EXT REF VIDEO OUT (G)
REG 12V OUT
GND (A) OUT
VM 710-1
82
CN730W
HN VM2
SERIAL CLOCK OUT
DIGITAL 7V OUT
SERIAL OUT
DIGITAL GND OUT
L:CNR SELECT OUT
H:NTSC/L:PAL OUT
CNR SYNC IN
L:CNR CONNECTED IN
H:SEARCH OUT
L:POWER SAVE OUT
CNR ON OUT
H:1st FIELD WRITE IN
VM 711-1
(S.G)
HN-182
CN162
DP-1
CN156
A-SEG IN
B-SEG IN
C-SEG IN
D-SEG IN
E-SEG IN
F-SEG IN
G-SEG IN
LED 1 IN
CN161
DP-2
CN155
SCAN 7 IN
SCAN 8 IN
SCAN 5 IN
SCAN 6 IN
DIG 6 IN
DIG 5 IN
DIG 4 IN
DIG 3 IN
DIG 2 IN
DIG 1 IN
SW 2 OUT
SW 1 OUT
DP-166
CN154W
SEARCH
SEARCH DIAL T IN
SEARCH DIAL A IN
SEARCH DIAL B IN
SEARCH DIAL C IN
SEARCH DIAL D IN
ROTARY ENCODER (SEARCH DIAL)
CN152B
CONT-S
REMOCON VCC OUT
REMOCON SIG OUT
CN1002 CONTROL-S
CN159
KY-SW (TR VR)
TRACKING +5V OUT
TRACKING VR IN
TRACKING GND
SW-513 167-3
SW-513 167-2
SW-513 167-1
CN902
REG -7V/-6V OUT
REG 12V (M)
GND (M)
REG 5.3V/5V OUT
REG 5.9V OUT
GND (SS)
GND (V)
GND (A)
REG 12.3V/12V OUT
REG 7V OUT
CN901W
AC IN (L)
AC IN (N)
SWITCH REG
S1004 POWER
POWER SW
NC
CN904W
AC OUT (L)
AC OUT (N)
C1 0.022 250V /AC-148
0.01 400V /AC-103
R1 1M 1/2W
L1 72μH
L2 72μH
F1 2A 125V/AC-103 T2A 250V/AC-148
CN903
AC INLET (L)
AC INLET (N)
CN1001 AC INLET
AC-103 (SVO-9600) /148 (SVO-9620)
TO/FROM FRAME (2/2)
1
2
3
4
5
H
I
J
K
L
M
N
O
P

FRAME (1/2)

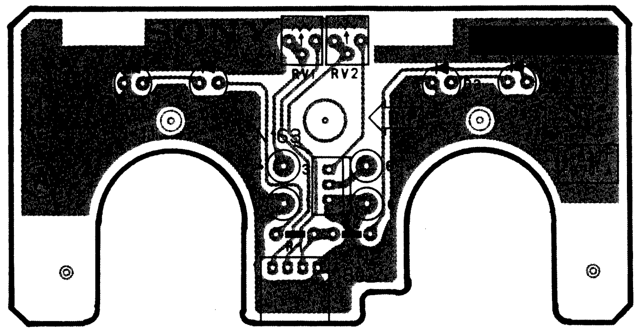
SVO-9620

13-49

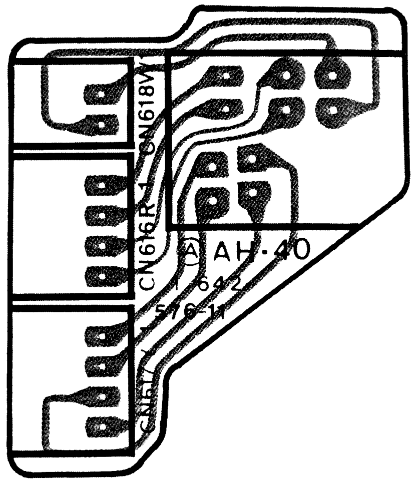
FRAME (2/2), AH-40, HP-54, MT-73

13-50

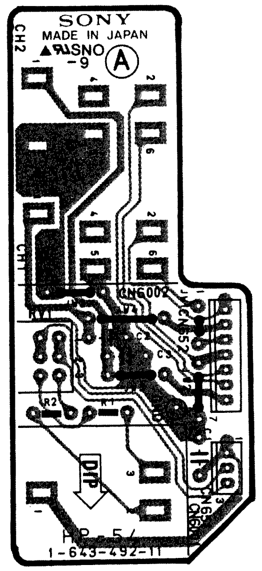
AH-40 ; AUDIO/ERASE/CTL HEAD
HP-54 ; HEADPHONES/MIC CONNECTOR
MT-73 ; LEVEL METER



MT-73 — A SIDE —
1-643-483-11 (1)
SVO-9620

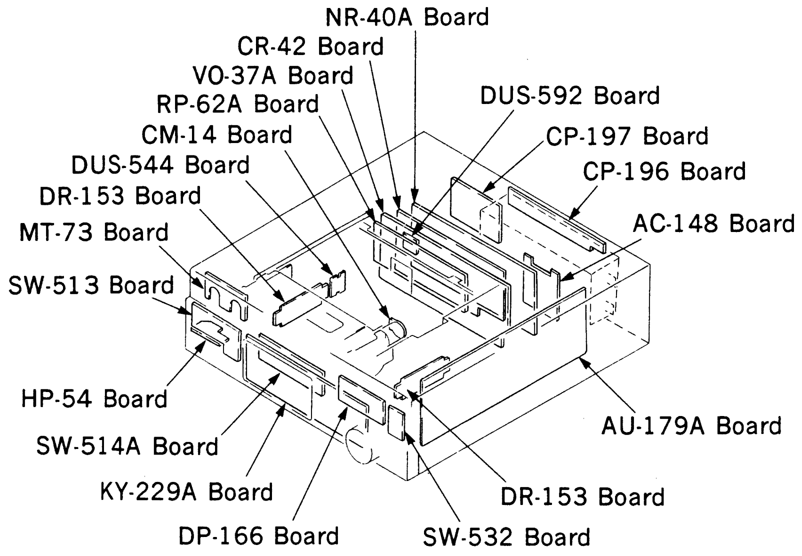

CN618V
CN616R
CN617
A AH-40
1-642-576-11

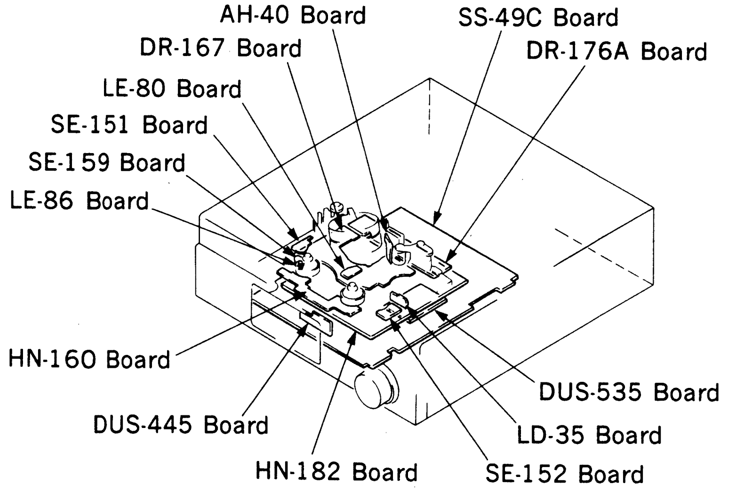
AH-40 — A SIDE —
1-642-576-11 (1)
SVO-9620

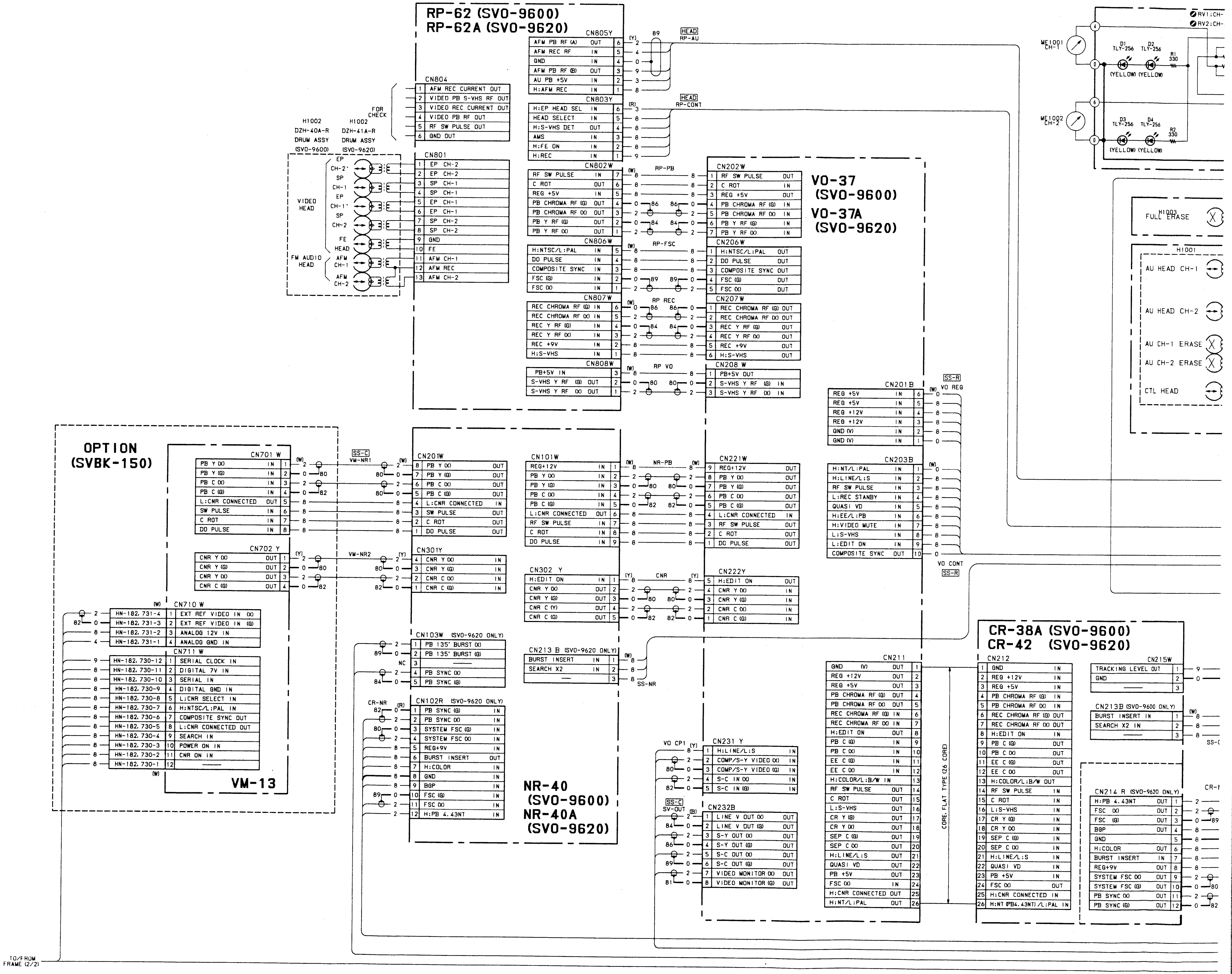

SONY
MADE IN JAPAN
CH2
CH1
CN6002
DIP
HP-54
1-643-492-11

HP-54 — A SIDE —
1-643-492-11 (1)
SVO-9620

FRAME (2/2)


NR-40A Board
CR-42 Board
VO-37A Board
RP-62A Board
CM-14 Board
DUS-544 Board
DR-153 Board
MT-73 Board
SW-513 Board
HP-54 Board
SW-514A Board
KY-229A Board
DP-166 Board
DUS-592 Board
CP-197 Board
CP-196 Board
AC-148 Board
AU-179A Board
DR-153 Board
SW-532 Board

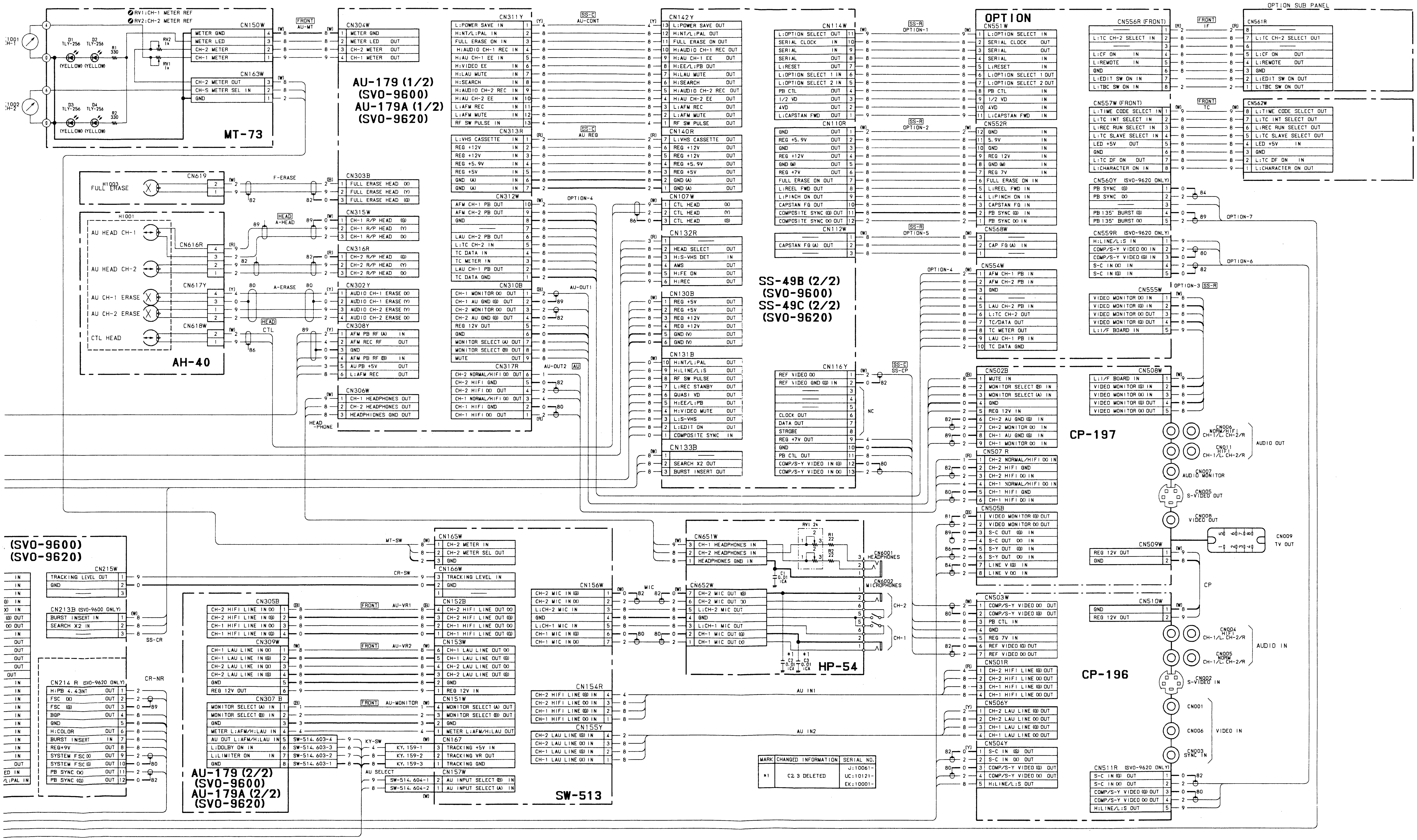

AH-40 Board
DR-167 Board
LE-80 Board
SE-151 Board
SE-159 Board
LE-86 Board
HN-160 Board
DUS-445 Board
HN-182 Board
SS-49C Board
DR-176A Board
DUS-535 Board
LD-35 Board
SE-152 Board


RP-62 (SVO-9600)
RP-62A (SVO-9620)
CN805Y
CN804
CN803Y
CN801
CN802W
CN806W
CN807W
CN808W
H1002 DZH-40A-R DRUM ASSY (SVO-9600)
H1002 DZH-41A-R DRUM ASSY (SVO-9620)
FOR CHECK
VIDEO HEAD
FM AUDIO HEAD
HEAD RP-AU
HEAD RP-CONT
VO-37 (SVO-9600)
VO-37A (SVO-9620)
CN202W
CN206W
CN207W
CN208 W
CN201B
CN203B
SS-R VO REG
VO CONT
ME1001 CH-1
ME1002 CH-2
RV1:CH-
RV2:CH-
H1003 FULL ERASE
H1001
AU HEAD CH-1
AU HEAD CH-2
AU CH-1 ERASE
AU CH-2 ERASE
CTL HEAD
OPTION (SVBK-150)
CN701 W
CN702 Y
CN710 W
CN711 W
VM-13
SS-C VM-NR1
VM-NR2
CN201W
CN301Y
CN101W
CN302 Y
CN221W
CN222Y
CN103W (SVO-9620 ONLY)
CN102R (SVO-9620 ONLY)
CN213 B (SVO-9620 ONLY)
NR-PB
CNR
SS-NR
NR-40 (SVO-9600)
NR-40A (SVO-9620)
VO CP1
SS-C SV-OUT
CN231 Y
CN232B
CN211
CORE, FLAT TYPE (26 CORE)
CR-38A (SVO-9600)
CR-42 (SVO-9620)
CN212
CN215W
CN213B (SVO-9600 ONLY)
CN214 R (SVO-9620 ONLY)
10/FROM FRAME (2/2)

FRAME (2/2)

SVO-9620

FRAME (2/2), AH-40, HP-54, MT-73


MT-73
CN150W
CN163W
RV1:CH-1 METER REF
RV2:CH-2 METER REF
AH-40
CN619
FULL ERASE
H1001
AU HEAD CH-1
AU HEAD CH-2
AU CH-1 ERASE
AU CH-2 ERASE
CTL HEAD
CN616R
CN617Y
CN618W
AU-179 (1/2)
(SVO-9600)
AU-179A (1/2)
(SVO-9620)
CN304W
CN303B
CN315W
CN316R
CN302Y
CN308Y
CN306W
CN311Y
CN313R
CN312W
CN310B
CN317R
F-ERASE
A-HEAD
A-ERASE
CTL
HEAD-PHONE
AU-CONT
AU REG
OPTION-4
AU-OUT1
AU-OUT2
CN142Y
CN140R
CN107W
CN132R
CN130B
CN131B
CN133B
CN114W
CN110R
CN112W
CN116Y
SS-49B (2/2)
(SVO-9600)
SS-49C (2/2)
(SVO-9620)
OPTION-1
OPTION-2
OPTION-5
SS-CP
OPTION
CN551W
CN552R
CN568W
CN554W
CN556R (FRONT)
CN561R
OPTION SUB PANEL
CN557W (FRONT)
CN562W
CN560Y (SVO-9620 ONLY)
CN559R (SVO-9620 ONLY)
CN555W
OPTION-3
OPTION-6
OPTION-7
CP-197
CN502B
CN508W
CN507R
CN505B
CN509W
AUDIO OUT
AUDIO MONITOR
S-VIDEO OUT
VIDEO OUT
TV OUT
CP-196
CN503W
CN510W
CN501R
CN506Y
CN504Y
CN511R (SVO-9620 ONLY)
AUDIO IN
S-VIDEO IN
VIDEO IN
SYNC IN
HP-54
CN651W
CN652W
HEADPHONES
MICROPHONES
CH-1
CH-2
SW-513
CN165W
CN166W
CN152B
CN153W
CN151W
CN167
CN157W
CN156W
CN154R
CN155Y
MIC
AU IN1
AU IN2
MT-SW
CR-SW
SS-CR
CR-NR
AU-VR1
AU-VR2
AU-MONITOR
KY-SW
AU SELECT
AU-179 (2/2)
(SVO-9600)
AU-179A (2/2)
(SVO-9620)
CN305B
CN309W
CN307B
(SVO-9600)
(SVO-9620)
CN215W
CN213B (SVO-9600 ONLY)
CN214R (SVO-9620 ONLY)
CP

MARK	CHANGED INFORMATION	SERIAL NO.
*1	C2,3 DELETED	J:10061- UC:10121- EK:10001-

13-51

SECTION 14
SPARE PARTS AND FIXTURES

14-1. PARTS INFORMATION

(1) Safety Related Components Warning

Components marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear in this manual or in service bulletin and service manual supplements published by Sony.

(2) Standardization of Parts

Spare parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".
This manual's exploded views and electrical parts list are indicating the part numbers of "the standardized genuine parts at present".

(3) Stock of Parts

Parts marked with "o" SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors

The following units may be assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : μF
Inductors : μH
Resistors : Ω

14-2. EXPLODED VIEWS

- Exploded views are composed of the following blocks.

Page

(1) Ornamental panel block 14-3
    Top plate
    Front panel
    Key panel

(2) Key panel chassis block 14-4

(3) Rear Panel block 14-5
    Switching Regulator

(4) Printed circuit boards 14-6

(5) Cassette compartment block 14-7

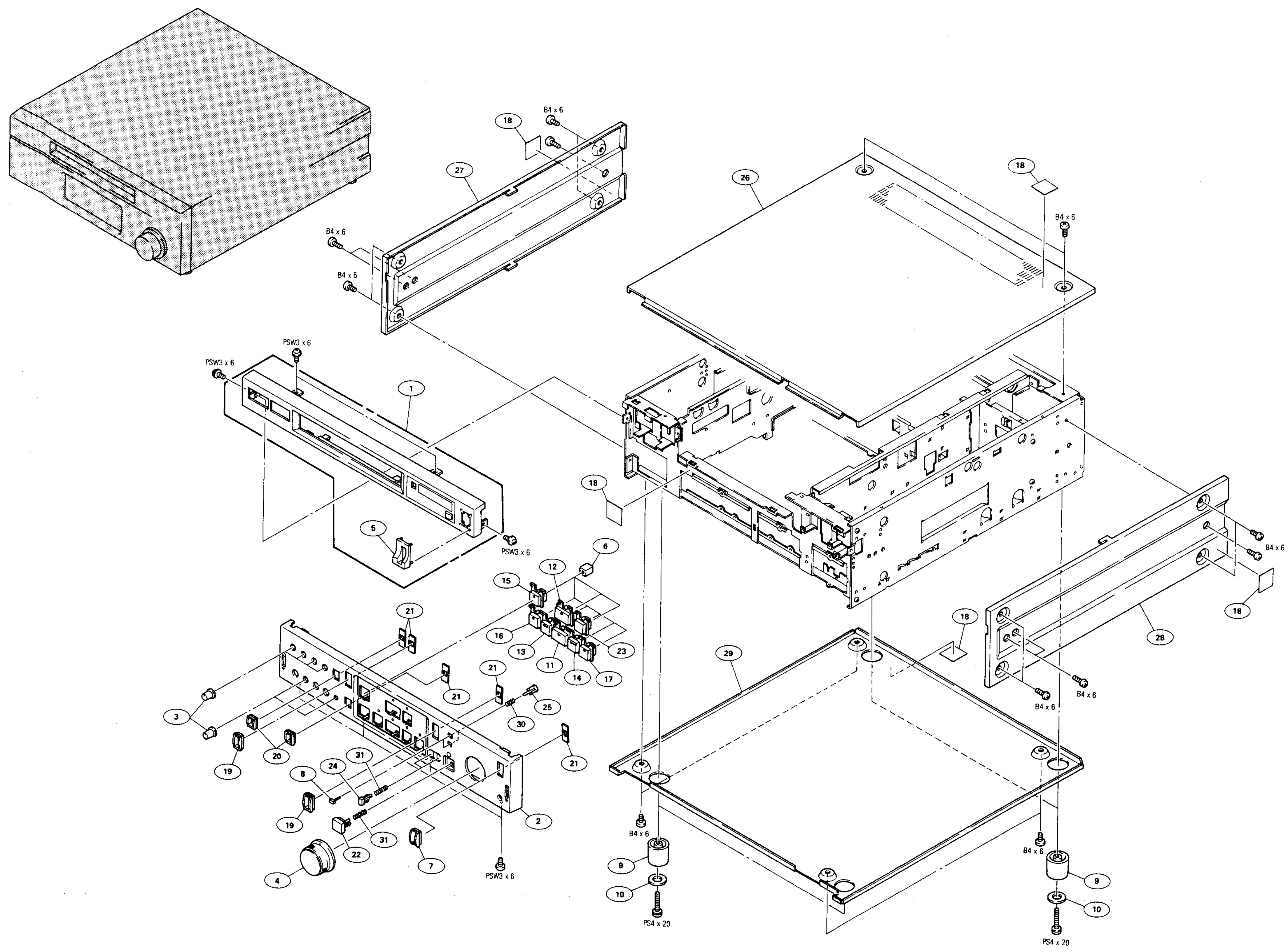
(6) Drum assy and tape run blocks 14-8
    Drum assy
    Cleaning roller
    Tape guides
    Stationary heads
    Slide rails

(7) Reel table and pinch roller blocks 14-9
    S/T reel table
    Pinch roller block
    Tension regulator arm
    RVS tape guide

Page

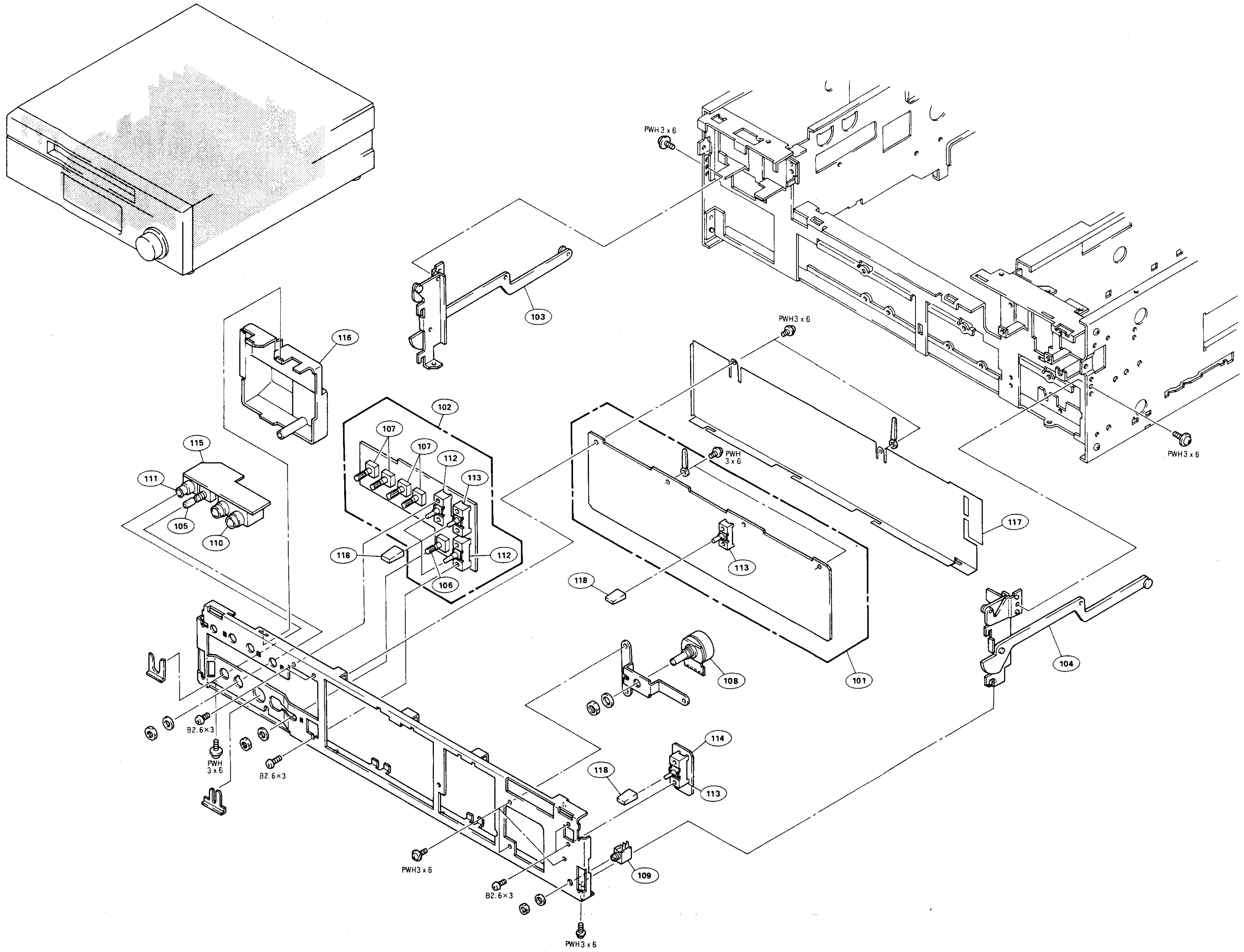
(8) Mechanism control block 14-10
    Reel motor
    Capstan motor
    Cam motor block
    S/T brake arm
    Threading gear assembly

Ornamental panel block


18
B4 x 6
27
26
18
B4 x 6
B4 x 6
B4 x 6
PSW3 x 6
PSW3 x 6
1
5
PSW3 x 6
6
12
15
18
16
13
11
14
17
23
21
21
21
25
30
3
20
19
8
24
31
21
2
19
22
31
7
4
PSW3 x 6
29
18
28
B4 x 6
B4 x 6
B4 x 6
18
B4 x 6
9
10
PS4 x 20
B4 x 6
9
10
PS4 x 20

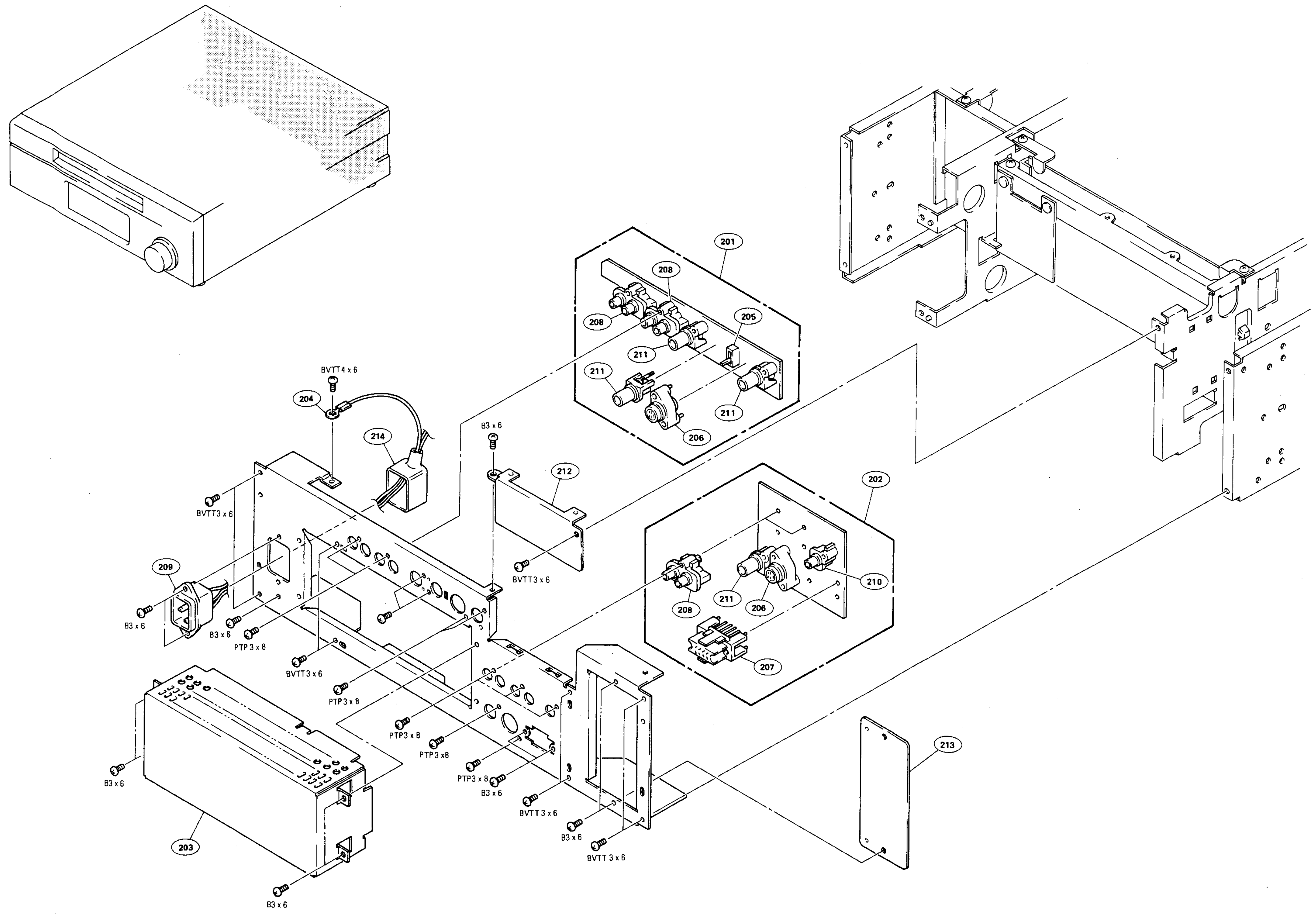
No.	Part No.	SP	Description
1	X-3166-766-1	o	PANEL ASSY, FRONT
2	X-3166-710-2	o	PANEL ASSY, KEY
3	X-3668-075-0	s	KNOB ASSY, CONTROL
4	X-3718-304-1	s	KNOB ASSY, DIAL
5	2-251-642-00	o	GUARD, POWER SWITCH
6	2-284-744-00	o	CUSHION (B), KEY
7	3-176-122-01	o	FRAME, LEVER SW
8	3-668-008-11	s	PUSH BUTTON (3x5)
9	3-668-844-01	s	LEG
10	3-668-845-01	o	CUSHION, LEG
11	3-672-782-02	s	KEY TOP (A), PLAY
12	3-672-782-11	s	KEY TOP (A), REC
13	3-672-783-02	s	KEY TOP (B), REW
14	3-672-783-12	s	KEY TOP (B), FF
15	3-672-783-32	s	KEY TOP (B), EJECT
16	3-672-783-42	s	KEY TOP (B), STOP
17	3-672-783-52	s	KEY TOP (B), PAUSE
18	3-703-079-21	o	LABEL, SUB CAUTION (EK)
19	3-717-374-01	o	FRAME (23x12), SWITCH
20	3-717-375-01	o	FRAME (18x12), SWITCH
21	3-717-613-01	o	PLATE, SWITCH BLIND
22	3-733-602-01	s	KEY TOP, SEARCH
23	3-733-604-01	s	KEY TOP, DUB
24	3-733-606-01	s	PUSH BUTTON (5x9), ITEM/DATA
25	3-738-912-01	s	PIN (9), PUSH BUTTON
26	3-738-924-02	o	PLATE, TOP
27	3-738-925-03	o	PLATE (LEFT), SIDE
28	3-738-926-03	o	PLATE (RIGHT), SIDE
29	3-947-146-11	o	PLATE, BOTTOM
30	4-309-349-00	s	SPRING, COIL
31	4-866-613-00	s	SPRING, COIL

Key panel chassis block


PWH3 x 6
103
116
PWH3 x 6
102
107
107
112
113
115
111
105
110
118
112
106
117
PWH 3 x 6
113
118
101
104
108
B2.6×3
PWH 3 x 6
B2.6×3
114
118
113
PWH3 x 6
109
B2.6×3
PWH3 x 6

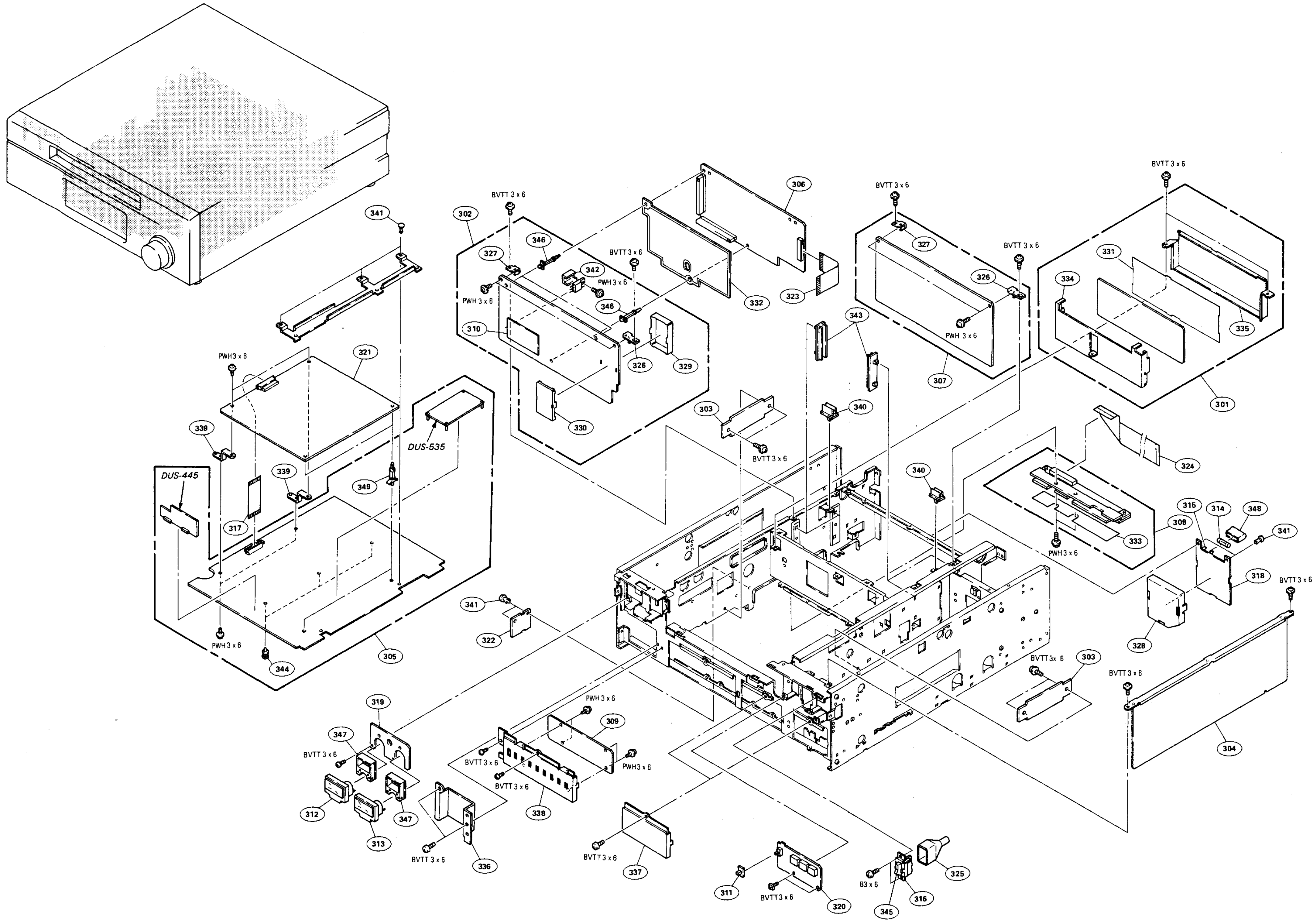
No.	Part No.	SP	Description
101	A-8271-529-A	o	MOUNTED CIRCUIT BOARD, KY-229A
102	A-8271-368-A	o	MOUNTED CIRCUIT BOARD, SW-513
103	X-3738-903-1	o	HINGI (LEFT) ASSY
104	X-3738-904-1	o	HINGI (RIGHT) ASSY
105	1-237-703-11	s	VAR RES, CARBON 2k/2kΩ (WITH WASHER AND NUT)
106	1-237-713-11	s	VAR RES, CARBON 100kΩ
107	1-238-483-11	s	VAR RES, CARBON 5kΩ
108	1-464-801-12	s	ENCODER, ROTARY (WITH WASHER AND NUT)
109	1-507-743-21	s	JACK, MINIATURE (WITH WASHER AND NUT)
110	1-507-797-21	s	JACK, LARGE TYPE 2P (WITH ATTACH PLATE (B))
111	1-507-854-00	s	JACK, LARGE TYPE (WITH ATTACH PLATE (A))
112	1-516-961-00	s	SWITCH, LEVER SLIDE (2-2-2)
113	1-516-995-00	s	SWITCH, LEVER SLIDE (2-2-3)
114	1-643-487-12	o	PRINTED CIRCUIT BOARD, SW-532
115	1-643-492-11	o	PRINTED CIRCUIT BOARD, HP-54
116	3-176-127-01	o	PROTECTER, P.C.B
117	3-176-133-02	o	SHIELD PLATE, P.C.B KY-229
118	3-717-382-01	s	KNOB, LEVER SW

Rear panel block


201
208
208
205
211
211
211
206
BVTT4 x 6
204
214
B3 x 6
212
202
BVTT3 x 6
209
B3 x 6
B3 x 6
PTP3 x 8
BVTT3 x 6
BVTT3 x 6
PTP3 x 8
PTP3 x 8
PTP3 x8
PTP3 x 8
B3 x 6
BVTT3 x 6
B3 x 6
BVTT3 x 6
210
208
211
206
207
213
B3 x 6
203
B3 x 6

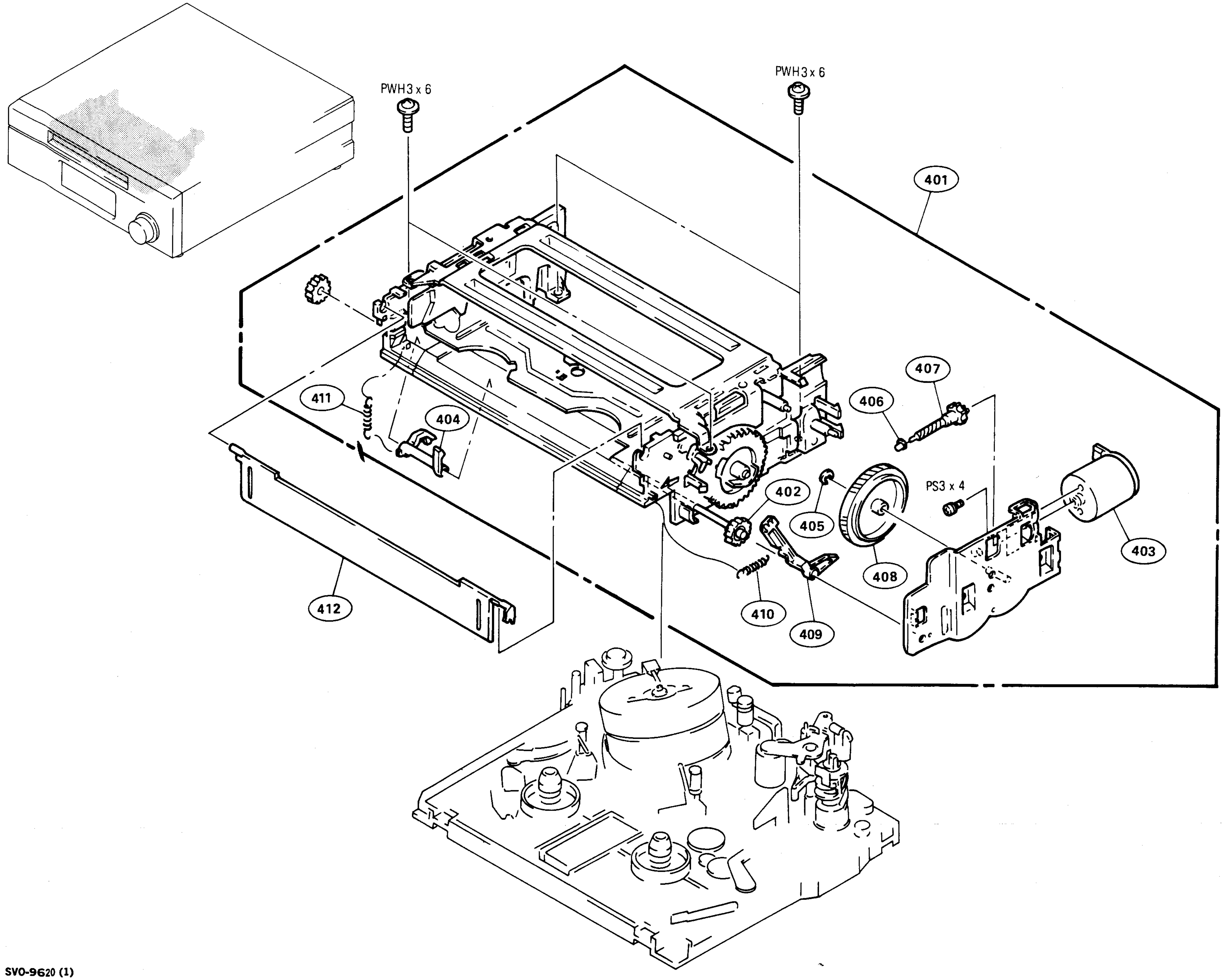
No.	Part No.	SP	Description
201	A-8271-372-A	o	MOUNTED CIRCUIT BOARD, CP-196
202	A-8271-373-A	o	MOUNTED CIRCUIT BOARD, CP-197
203 ⚠	1-413-730-11	s	SWITCHING REGULATOR ZSSP067HA
204	1-535-316-11	o	TERMINAL, GROUND (M4)
205	1-570-145-11	s	SWITCH, SLIDE
206	1-573-590-12	s	CONNECTOR, TERMINAL 4P (S-VIDEO)
207	1-573-602-11	s	CONNECTOR, TERMINAL 8P (TV OUT)
208	1-573-744-11	s	JACK, PIN 2P
209 ⚠	1-580-375-11	s	INLET 3P
210	1-691-273-11	s	JACK, PIN 1P
211	1-691-274-11	s	CONNECTOR, BNC
212	3-168-049-01	o	PANEL, BLANK
213	3-176-115-01	o	COVER, REAR PANEL
214	4-605-946-01	s	COVER, 3P INLET

Printed circuit boards


341
302
BVTT 3 x 6
346
327
342
PWH 3 x 6
346
310
326
329
330
306
332
323
BVTT 3 x 6
327
326
PWH 3 x 6
343
307
BVTT 3 x 6
331
334
335
301
PWH 3 x 6
321
339
339
349
DUS-535
DUS-445
317
306
PWH 3 x 6
344
303
BVTT 3 x 6
340
340
324
315
314
348
341
308
333
PWH 3 x 6
318
BVTT 3 x 6
328
BVTT 3x 6
303
BVTT 3 x 6
304
341
322
319
347
BVTT 3 x 6
312
313
347
BVTT 3 x 6
336
PWH 3 x 6
309
BVTT 3 x 6
PWH 3 x 6
338
BVTT 3 x 6
337
311
BVTT 3 x 6
320
B3 x 6
345
316
325

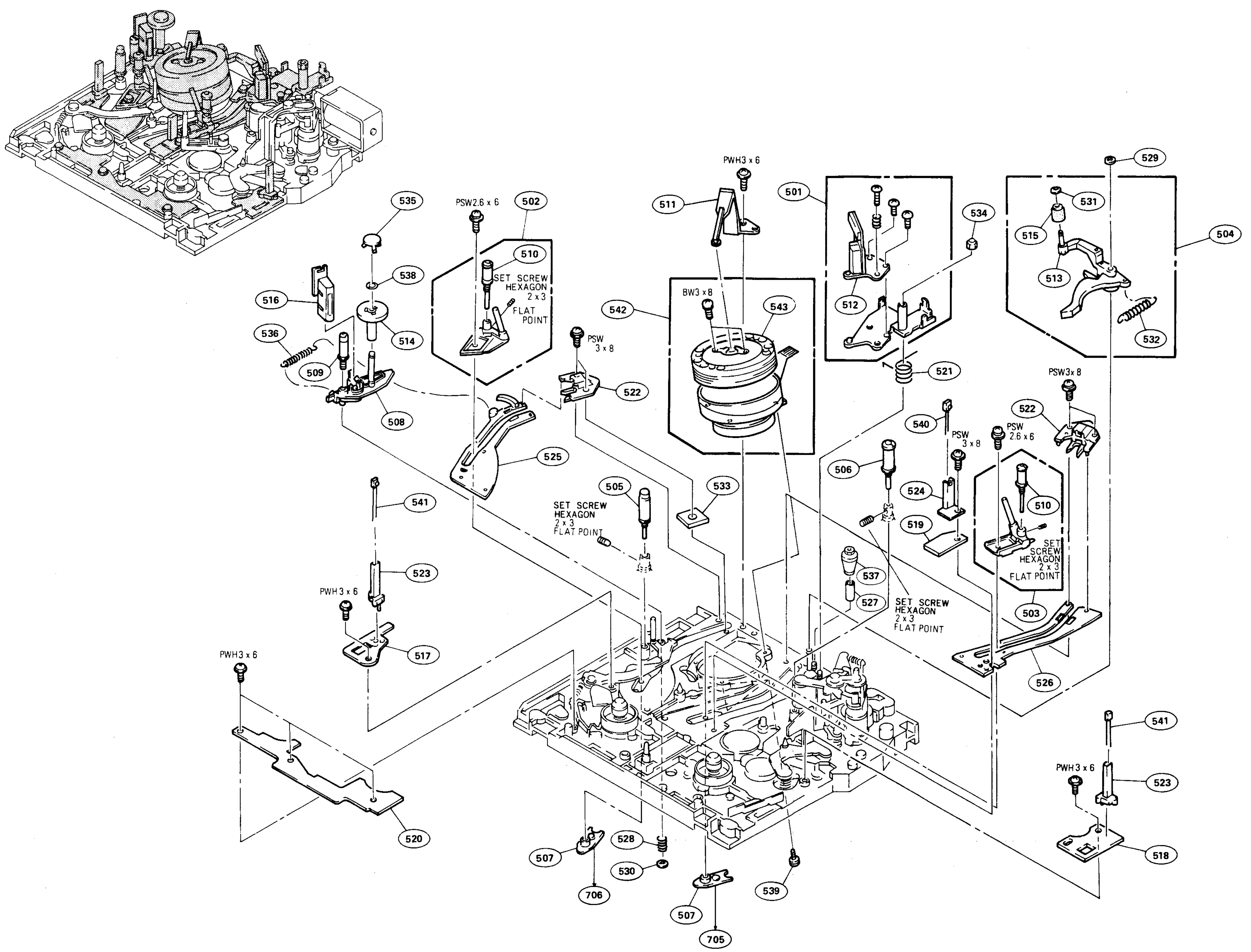
No.	Part No.	SP	Description
301	A-8271-316-A	o	MOUNTED CIRCUIT BOARD, RP-62A
302	A-8271-318-A	o	MOUNTED CIRCUIT BOARD, VO-37A
303	A-6756-022-A	o	MOUNTED CIRCUIT BOARD, DR-153
304	A-8271-526-A	o	MOUNTED CIRCUIT BOARD, AU-179A
305	A-8271-527-A	o	MOUNTED CIRCUIT BOARD, SS-49C
306	A-8271-528-A	o	MOUNTED CIRCUIT BOARD, CR-42
307	A-8271-530-A	o	MOUNTED CIRCUIT BOARD, NR-40A
308	A-8271-369-A	o	MOUNTED CIRCUIT BOARD, DR-176A
309	A-8276-368-A	o	MOUNTED CIRCUIT BOARD, SW-514A
310	A-8276-478-A	o	MOUNTED CIRCUIT BOARD, DUS-592
311	X-3719-114-1	s	KNOB ASSY (2 POSI)
312	1-520-506-11	s	METER, AUDIO LEVEL
313	1-520-506-31	s	METER, TRACKING/AUDIO LEVEL
314 ⚠	1-532-203-00	s	FUSE, TIME-LAG 2.0A 250V
315	1-533-189-11	s	HOLDER, FUSE
316 ⚠	1-570-117-41	s	SWITCH, AC POWER
317	1-590-308-11	s	WIRE, FLEXIBLE (20P)
318	1-645-568-11	o	PRINTED CIRCUIT BOARD, AC-148
319	1-643-483-11	o	PRINTED CIRCUIT BOARD, MT-73
320	1-643-491-11	o	PRINTED CIRCUIT BOARD, DP-166
321	1-644-091-11	o	PRINTED CIRCUIT BOARD, HN-182
322	1-644-095-12	o	PRINTED CIRCUIT BOARD, DUS-544
323	1-690-613-11	o	WIRE, FLEXIBLE (26P)
324	1-690-614-12	o	WIRE, FLEXIBLE (28P)
325	2-269-962-00	o	COVER, SWITCH
326	3-168-157-01	o	BRACKET (R), P.C.B
327	3-168-158-01	o	BRACKET (L), P.C.B
328	3-168-180-01	o	COVER, P.C.B AC
329	3-173-464-01	o	SHIELD (A), P.C.B VO-37
330	3-173-465-01	o	SHIELD (B), P.C.B VO-37
331	3-173-468-01	o	INSULATING SHEET, P.C.B RP-62
332	3-173-476-01	o	SHIELD PLATE, P.C.B VO-37
333	3-173-481-02	o	INSULATING SHEET, P.C.B DR-176A
334	3-173-491-02	o	SHIELD PLATE (A), P.C.B RP-62
335	3-173-492-01	o	SHIELD PLATE (B), P.C.B RP-62
336	3-176-113-01	o	COVER (A), FRAME
337	3-176-114-01	o	COVER (B), FRAME
338	3-176-124-11	o	PANEL, P.C.B SW-514
339	3-177-110-01	o	BRACKET, P.C.B HN-182
340	3-642-310-00	s	HOLDER, P.C.B
341	3-646-090-11	o	RIVET, NYLON
342	3-659-918-01	o	HEAT SINK, TRANSISTOR
343	3-680-613-01	o	SUPPORT, P.C.B
344	3-682-057-11	s	SPACER (SMALL)
345	3-688-814-01	s	CAP, POWER SWITCH
346	3-703-353-08	o	SUPPOTER, P.C.B
347	3-718-614-01	o	HOLDER (B), LAMP
348	4-601-472-00	o	COVER, FUSE
349	4-924-098-31	o	HOLDER, PC BOARD

Cassette compartment block


PWH3 x 6
PWH3 x 6
401
407
406
411
404
402
405
PS3 x 4
403
408
412
410
409

No.	Part No.	SP	Description
401	A-6751-446-A	s	FL BLOCK ASSY
402	X-3727-775-2	s	GEAR (RIGHT) ASSY, MIDWAY
403	X-3727-784-1	s	MOTOR ASSY
404	3-168-046-02	s	LEVER, PREVENTION
405	3-696-510-01	s	WASHER (3), STOPPER
406	3-716-144-02	s	RETAINER, WORM
407	3-736-100-01	s	GEAR (FL), WORM
408	3-736-164-01	s	WHEEL (FL), WORM
409	3-736-167-01	s	ARM, DOOR SWITCHING
410	3-738-285-01	s	SPRING, TENSION
411	3-739-687-01	s	SPRING, TENSION
412	3-945-199-31	s	DOOR, FL

Drum assy and tape run blocks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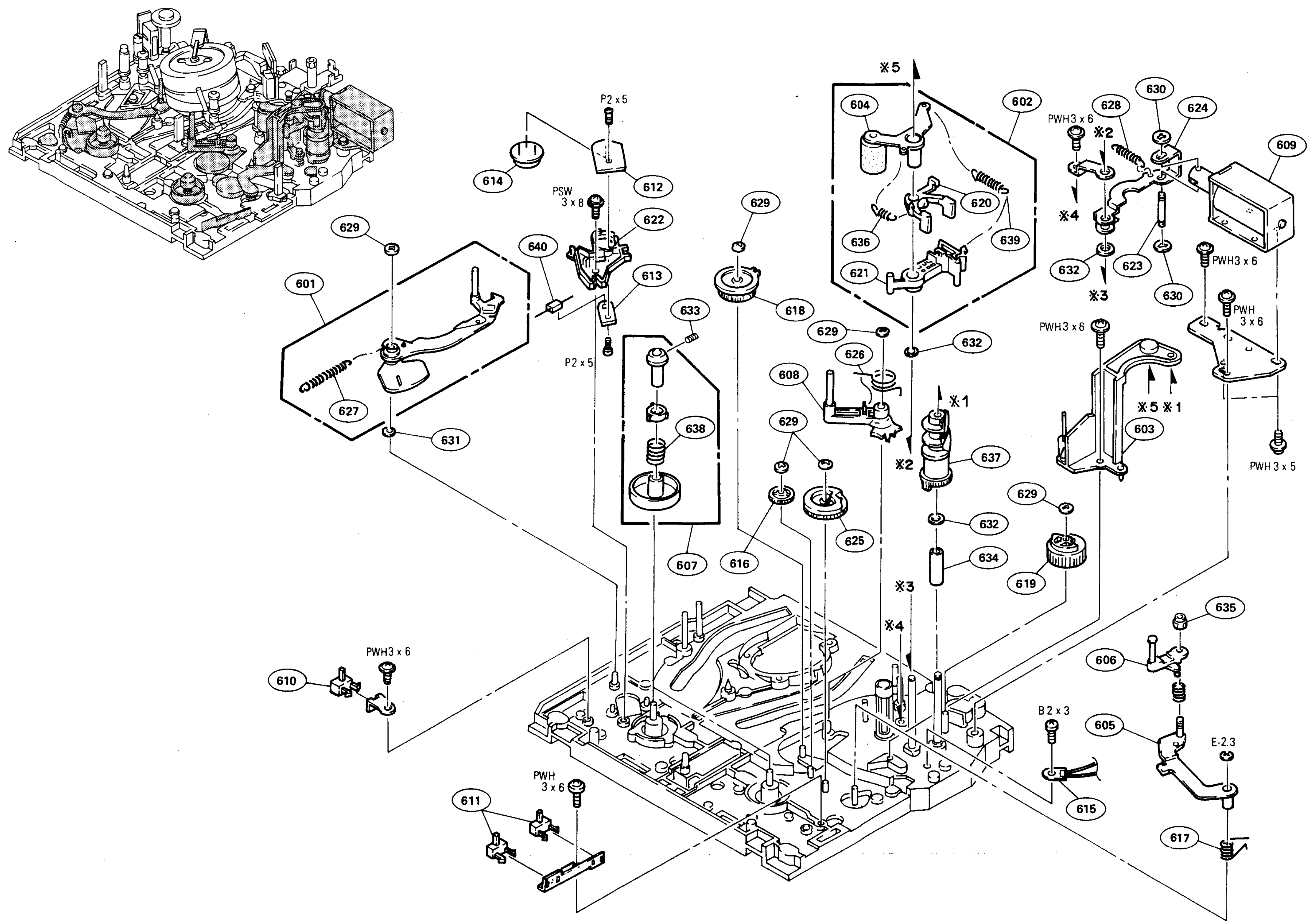
PSW2.6 x 6
502
510
SET SCREW
HEXAGON
2 x 3
FLAT
POINT
538
516
514
536
509
508
PWH3 x 6
511
501
534
529
531
515
504
513
532
542
BW3 x 8
543
512
521
PSW
3 x 8
522
525
540
PSW3x 8
522
PSW
2.6 x 6
PSW
3 x 8
506
524
510
519
SET
SCREW
HEXAGON
2 x 3
FLAT POINT
505
SET SCREW
HEXAGON
2 x 3
FLAT POINT
533
541
537
527
SET SCREW
HEXAGON
2 x 3
FLAT POINT
503
523
PWH3 x 6
517
PWH3 x 6
526
520
541
PWH3 x 6
523
518
507
528
530
706
539
507
705

No.	Part No.	SP	Description
501	A-8262-502-A	s	HEAD BLOCK ASSY. AUDIO
502	A-6746-062-B	s	SHUTTLE (LEFT) BLOCK ASSY
503	A-6746-063-B	s	SHUTTLE (RIGHT) BLOCK ASSY
504	A-6747-277-A	o	ROLLER BLOCK ASSY. MC
505	X-3165-325-2	s	ROLLER ASSY. No.1 GUIDE
506	X-3165-326-2	s	ROLLER ASSY. No.9 GUIDE
507	X-3165-329-1	o	PLATE ASSY. SHUTTLE
508	X-3165-335-1	o	BASE ASSY. STABILIZER
509	X-3165-336-1	s	ROLLER ASSY. No.2 GUIDE
510	X-3165-337-1	s	ROLLER ASSY. GUIDE
511	X-3165-584-1	s	GROUND ASSY. SHAFT
512	X-3166-709-1	o	HEAD ASSY. ACE
513	X-3166-556-1	o	ARM ASSY. MC ROLLER
514	X-3727-771-1	s	STABILIZER ASSY. TAPE
515	X-3743-515-4	s	ROLLER ASSY. C
516	1-543-695-11	s	HEAD. FULL-ERASE
517	1-637-245-13	o	PRINTED CIRCUT BOARD. SE-151
518	1-637-246-12	o	PRINTED CIRCUT BOARD. SE-152
519	1-637-247-11	o	PRINTED CIRCUT BOARD. LE-80
520	1-637-251-12	o	PRINTED CIRCUT BOARD. HN-160
521	3-166-987-01	s	SPRING. AH COIL
522	3-166-992-02	s	HOLDER. SHUTTLE
523	3-167-013-02	o	HOLDER. ST SENSOR
524	3-167-028-02	o	HOLDER. LED
525	3-167-034-02	s	RAIL (L). SLIDE
526	3-167-035-05	s	RAIL (R). SLIDE
527	3-177-109-01	s	SLEEVE
528	3-305-423-00	s	SPRING. COMPRESSION
529	3-650-537-00	o	WASHER
530	3-669-465-00	s	WASHER (1.5). STOPPER
531	3-669-595-00	s	WASHER (2). STOPPER
532	3-669-979-00	s	SPRING. TENSION
533	3-675-713-91	s	SPACER. VIDEO HEAD
534	3-736-041-01	s	NUT (N3). NYLON
535	3-736-082-01	s	RETAINER. TS THRUST
536	3-736-745-01	s	SPRING
537	3-738-250-01	s	SCREW. AC ADJUSTMENT
538	3-741-925-01	s	RING. RETAINING
539	3-899-248-11	s	SCREW (M3x8)
540	8-719-985-00	s	LED GL451VS1
541	8-729-926-31	s	PHOTO TRANSISTOR PT483F1S
542	8-848-578-12	s	DRUM ASSY. DZH-41A-R
543	8-848-579-02	s	UPPER DRUM ASSY. DZR-41-R

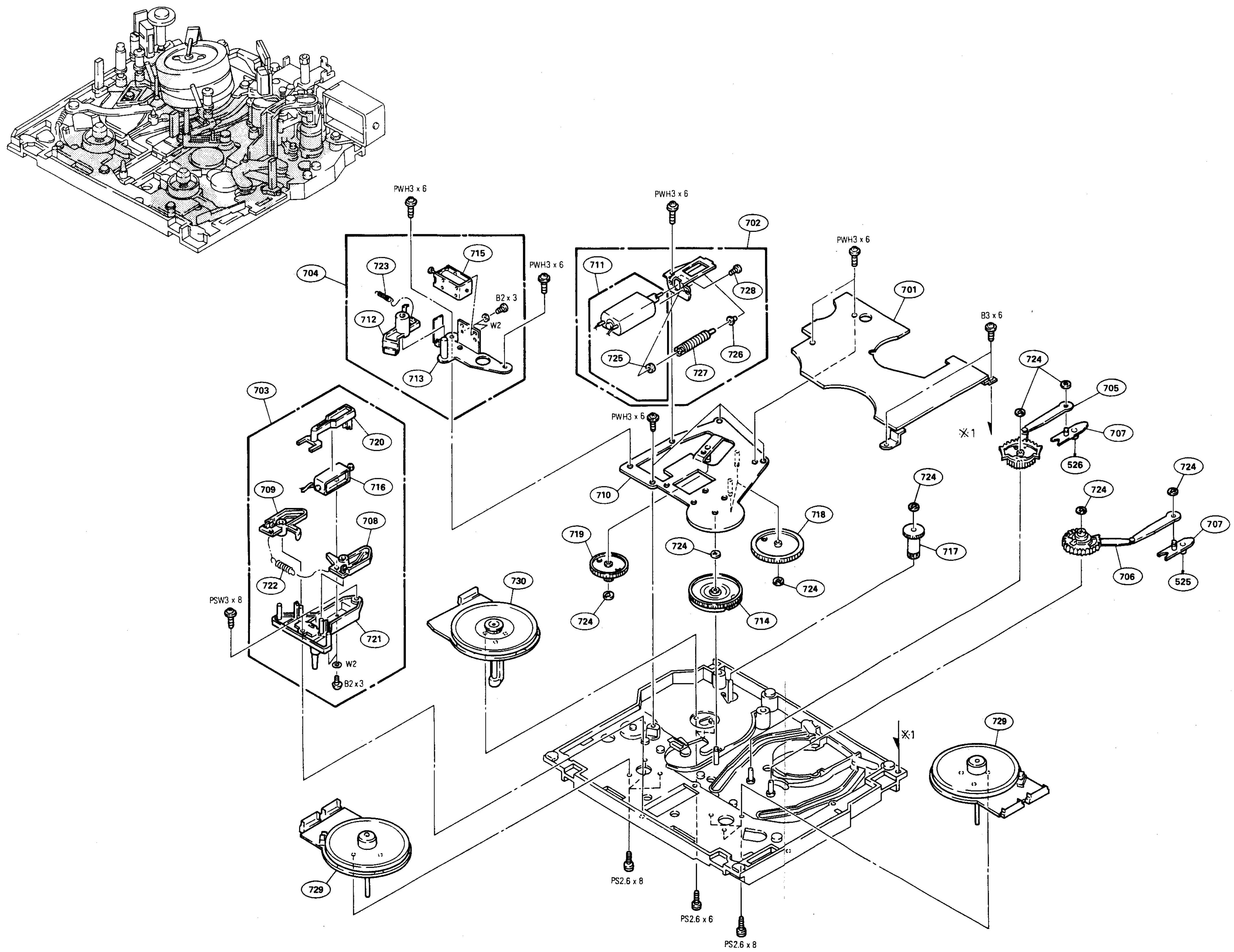
REEL TABLE AND PINCH ROLLER BLOCKS

Reel table and pinch roller blocks


※5
604
602
630
628
624
PWH3 x 6
※2
609
P2 x 5
614
612
PSW
3 x 8
620
629
622
※4
636
639
629
640
613
621
632
623
※3
630
PWH3 x 6
601
633
618
PWH
3 x 6
P2 x 5
629
632
PWH3 x 6
626
608
※1
※5 ※1
627
638
603
631
629
637
※2
PWH3 x 5
629
625
632
607
616
634
619
※3
635
※4
PWH3 x 6
606
610
B2 x 3
605
E-2.3
PWH
3 x 6
615
611
617

No.	Part No.	SP	Description
601	A-6742-071-A	s	ARM ASSY. TENSION REGULATOR
602	A-6750-279-C	s	PINCH ROLLER BLOCK ASSY
603	X-3166-781-1	s	OPENER ASSY. CASSETTE
604	X-3165-332-2	o	ARM ASSY. PINCH ROLLER
605	X-3165-340-1	o	ARM ASSY. RVS
606	X-3165-341-1	s	BASE ASSY. GUIDE
607	X-3165-345-1	s	TABLE ASSY. REEL
608	X-3166-369-2	s	GEAR ASSY. FR
609	1-454-434-21	s	SOLENOID. PLUNGER
610	1-570-771-11	s	SWITCH. MICRO
611	1-571-099-11	s	SWITCH. MICRO
612	1-637-249-11	o	PRINTED CIRCUIT BOARD. SE-159
613	1-637-250-11	o	PRINTED CIRCUIT BOARD. LE-86
614	1-806-232-21	s	DETECTOR MB-1102/S.N
615	1-806-682-91	s	SENSOR. DEW CONDENSATION
616	3-166-989-01	s	GEAR. RVS RELAY
617	3-166-991-01	s	SPRING. RVS COIL
618	3-167-006-01	s	GEAR. FR DRIVING
619	3-167-008-01	s	GEAR. PRESS CAM
620	3-167-011-02	o	CONVEXITY BLOCK
621	3-167-012-02	o	ARM. PRESS LOCK
622	3-167-036-01	o	HOLDER. STD
623	3-174-491-01	o	PIN. SOLENOID
624	3-174-492-01	o	LEVER. PRESS
625	3-174-891-01	s	GEAR (2). RVS CAM
626	3-174-892-01	s	SPRING. FR COIL
627	3-490-159-00	s	SPRING. TENSION
628	3-646-209-11	s	SPRING. M-SW LEVER
629	3-669-596-00	s	WASHER (2.3). STOPPER
630	3-694-792-01	o	WASHER
631	3-701-439-21	s	WASHER. POLY 3MM DIA.. 0.5t
632	3-701-443-21	s	WASHER. POLY 5MM DIA.. 0.5t
633	3-701-506-01	s	SET SCREW. DOUBLE POINT 3x4
634	3-703-309-31	s	SPACER (5x18)
635	3-736-041-01	s	NUT (N3). NYLON
636	3-736-046-01	s	SPRING (RETURN). TENSION
637	3-736-136-01	s	CAM. ELEVATOR
638	3-739-621-01	s	SPRING. COMPRESSION
639	3-177-579-01	s	SPRING (PRESS 1.5). TENSION
640	8-719-821-22	s	LED TL0221. ORG

Mechanism control block


PWH3 x 6
PWH3 x 6
PWH3 x 6
PWH3 x 6
PWH3 x 6
704
723
715
712
713
B2 x 3
W2
702
711
728
725
726
727
701
B3 x 6
703
720
716
709
708
722
721
PSW3 x 8
W2
B2x3
710
719
724
718
717
※1
705
707
526
706
707
525
730
714
729
729
PS2.6 x 8
PS2.6 x 6
PS2.6 x 8

No.	Part No.	SP	Description
701	A-6715-460-A	o	MOUNTED CIRCUIT BOARD, DR-167
702	A-6737-203-C	s	MOTOR BLOCK ASSY, CAM
703	A-6741-069-A	o	BRAKE BLOCK ASSY, REEL
704	A-6741-070-A	o	BRAKE BLOCK ASSY, LDB
705	A-6750-281-A	s	GEAR (RIGHT) BLOCK ASSY, LOADING
706	A-6750-282-A	s	GEAR (LEFT) BLOCK ASSY, LOADING
707	X-3165-329-1	o	PLATE ASSY, SHUTTLE
708	X-3165-330-3	s	ARM (S) ASSY, BRAKE
709	X-3165-331-2	s	ARM (T) ASSY, BRAKE
710	X-3165-347-2	o	HOLDER ASSY, DRIVING GEAR
711	X-3165-593-3	o	MOTOR ASSY, CAM
712	X-3166-511-1	s	ARM ASSY, LDB
713	X-3166-512-2	o	LDB (BASE) ASSY
714	X-3166-575-1	s	GEAR (2) ASSY, MODE
715	1-454-334-71	s	SOLENOID, PLUNGER
716	1-454-531-11	s	SOLENOID, PLUNGER
717	3-166-988-01	s	GEAR, PINCH COMMUNICATION
718	3-167-001-01	s	GEAR, RELAY
719	3-167-081-01	s	WHEEL, WORM
720	3-167-834-01	o	SLIDER, B
721	3-167-835-01	o	CLAMP, M
722	3-492-141-XX	s	SPRING, TENSION
723	3-176-439-02	s	SPRING, TENSION
724	3-669-596-00	s	WASHER (2.3), STOPPER
725	3-696-388-01	s	RUBBER, JOINT
726	3-716-144-02	s	RETAINER, WORM
727	3-733-395-01	s	GEAR (CAM), WORM
728	7-627-553-28	s	SCREW, PRECISION +P 2x2.5
729	8-835-432-01	s	MOTOR, DC SRV-0201A
730	8-835-480-02	s	MOTOR, DC SCV-0401A

14-3. ELECTRICAL PARTS LIST

AC-148 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-645-568-11	o	PRINTED CIRCUIT BOARD, AC-148
2pcs	1-533-189-11	s	HOLDER, FUSE
1pc	3-168-180-01	o	COVER, AC PC BOARD
2pcs	3-646-090-11	s	RIVET, NYLON
1pcs	4-601-472-00	o	COVER, FUSE
C1	⚠1-136-211-00	s	FILM 0.022uF 20% 250V
CN903	⚠1-564-321-00	o	CONNECTOR 2P, MALE
CN904	⚠1-564-215-11	o	CONNECTOR 4P, MALE
L1	⚠1-409-399-11	s	COIL, SN 72uH
L2	⚠1-409-399-11	s	COIL, SN 72uH
R1	⚠1-214-937-00	s	METAL 1M 1% 1/2W

AH-40 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-642-576-11	o	PRINTED CIRCUIT BOARD, AH-40
CN616	1-506-483-21	o	CONNECTOR, 4P, MALE
CN617	1-506-483-21	o	CONNECTOR, 4P, MALE
CN618	1-506-481-11	s	CONNECTOR, 2P, MALE
H1001	X-3166-709-1	o	HEAD ASSY, ACE

AU-179A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-526-A	o	MOUNTED CIRCUIT BOARD, AU-179A
1pc	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3X6
C1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C2	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C4	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C5	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C6	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C7	1-130-493-00	s	MYLAR 0.068uF 5% 50V
C8	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C10	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C11	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C12	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C13	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C14	1-123-369-00	s	ELECT 4.7uF 20% 63V
C15	1-123-382-00	s	ELECT 3.3uF 20% 100V
C17	1-124-915-11	s	ELECT 10uF 20% 16V
C18	1-123-369-00	s	ELECT 4.7uF 20% 63V
C19	1-123-369-00	s	ELECT 4.7uF 20% 63V
C19	*1 1-123-382-00	s	ELECT 3.3uF 20% 100V
C20	1-126-160-11	s	ELECT 1uF 20% 50V
C21	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C22	1-124-589-11	s	ELECT 47uF 20% 16V
C23	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C24	1-126-163-11	s	ELECT 4.7uF 20% 50V
C25	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C26	1-124-239-00	s	ELECT 6.8uF 20% 25V
C27	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C28	1-124-589-11	s	ELECT 47uF 20% 16V
C29	1-126-157-11	s	ELECT 10uF 20% 16V
C30	1-124-120-11	s	ELECT 220uF 20% 25V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C33	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C34	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C36	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C37	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C38	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C39	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C40	1-123-369-00	s	ELECT 4.7uF 20% 63V
C41	1-123-382-00	s	ELECT 3.3uF 20% 100V
C42	1-124-915-11	s	ELECT 10uF 20% 16V
C43	1-123-369-00	s	ELECT 4.7uF 20% 63V
C44	1-123-369-00	s	ELECT 4.7uF 20% 63V
C44	*1 1-123-382-00	s	ELECT 3.3uF 20% 100V
C46	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C47	1-126-163-11	s	ELECT 4.7uF 20% 50V
C48	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C49	1-124-239-00	s	ELECT 6.8uF 20% 25V
C50	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C51	1-126-157-11	s	ELECT 10uF 20% 16V
C52	1-124-120-11	s	ELECT 220uF 20% 25V
C59	1-126-157-11	s	ELECT 10uF 20% 16V
C61	1-126-157-11	s	ELECT 10uF 20% 16V
C62	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C63	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C64	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C65	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C66	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C67	1-126-934-11	s	ELECT 220uF 20% 16V

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(AU-179A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C201	1-124-257-00	s	ELECT 2.2uF 20% 50V
C202	1-124-257-00	s	ELECT 2.2uF 20% 50V
C203	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C206	1-126-163-11	s	ELECT 4.7uF 20% 50V
C207	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C209	1-124-589-11	s	ELECT 47uF 20% 16V
C211	1-126-160-11	s	ELECT 1uF 20% 50V
C213	1-124-234-00	s	ELECT 22uF 20% 16V
C214	1-126-157-11	s	ELECT 10uF 20% 16V
C215	1-126-163-11	s	ELECT 4.7uF 20% 50V
C216	1-130-477-00	s	MYLAR 0.0033uF 5% 50V
C217	1-126-163-11	s	ELECT 4.7uF 20% 50V
C218	1-124-584-00	s	ELECT 100uF 20% 10V
C219	1-131-587-11	s	TANTALUM 0.68uF 5% 35V
C220	1-126-157-11	s	ELECT 10uF 20% 16V
C221	1-126-157-11	s	ELECT 10uF 20% 16V
C223	1-130-486-00	s	MYLAR 0.018uF 10% 50V
C224	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C225	1-130-479-00	s	MYLAR 0.0047uF 5% 50V
C226	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C227	1-109-675-11	s	MICA 120pF 5% 500V
C228	1-109-621-00	s	MICA 220pF 1% 500V
C229	1-164-695-11	s	CERAMIC 0.0022uF 5% 50V
C229 *1	1-161-375-00	s	CERAMIC 0.0022uF 20% 16V
C231	1-126-163-11	s	ELECT 4.7uF 20% 50V
C232	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C233	1-126-157-11	s	ELECT 10uF 20% 16V
C234	1-164-695-11	s	CERAMIC 0.0022uF 5% 50V
C235	1-126-157-11	s	ELECT 10uF 20% 16V
C236	1-126-163-11	s	ELECT 4.7uF 20% 50V
C237	1-124-589-11	s	ELECT 47uF 20% 16V
C238	1-126-160-11	s	ELECT 1uF 20% 50V
C239	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C240	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C240 *1	NOT IN USE.		
C301	1-124-257-00	s	ELECT 2.2uF 20% 50V
C302	1-124-257-00	s	ELECT 2.2uF 20% 50V
C303	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C306	1-126-163-11	s	ELECT 4.7uF 20% 50V
C307	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C311	1-126-160-11	s	ELECT 1uF 20% 50V
C313	1-124-234-00	s	ELECT 22uF 20% 16V
C314	1-126-157-11	s	ELECT 10uF 20% 16V
C315	1-126-163-11	s	ELECT 4.7uF 20% 50V
C316	1-130-477-00	s	MYLAR 0.0033uF 5% 50V
C317	1-126-163-11	s	ELECT 4.7uF 20% 50V
C318	1-124-584-00	s	ELECT 100uF 20% 10V
C319	1-131-587-11	s	TANTALUM 0.68uF 5% 35V
C320	1-126-157-11	s	ELECT 10uF 20% 16V
C323	1-130-486-00	s	MYLAR 0.018uF 10% 50V
C324	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C325	1-130-479-00	s	MYLAR 0.0047uF 5% 50V
C326	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C327	1-109-675-11	s	MICA 120pF 5% 500V
C328	1-109-621-00	s	MICA 220pF 1% 500V
C329	1-164-695-11	s	CERAMIC 0.0022uF 5% 50V
C331	1-126-163-11	s	ELECT 4.7uF 20% 50V
C332	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V

(AU-179A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C333	1-126-157-11	s	ELECT 10uF 20% 16V
C335	1-126-157-11	s	ELECT 10uF 20% 16V
C336	1-126-163-11	s	ELECT 4.7uF 20% 50V
C337	1-124-589-11	s	ELECT 47uF 20% 16V
C338	1-164-695-11	s	CERAMIC 0.0022uF 5% 50V
C339	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C340	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C340 *1	NOT IN USE.		
C341	1-126-163-11	s	ELECT 4.7uF 20% 50V
C401	1-126-157-11	s	ELECT 10uF 20% 16V
C402	1-136-558-11	s	FILM 0.0039uF 10% 630V
C403	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C404	1-130-473-00	s	MYLAR 0.0015uF 5% 50V
C405	1-124-234-00	s	ELECT 22uF 20% 16V
C406	1-124-234-00	s	ELECT 22uF 20% 16V
C407	1-124-234-00	s	ELECT 22uF 20% 16V
C408	1-136-187-11	s	FILM 0.068uF 10% 100V
C409	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C410	1-130-473-00	s	MYLAR 0.0015uF 5% 50V
C411	1-130-488-00	s	MYLAR 0.027uF 5% 50V
C412	1-124-589-11	s	ELECT 47uF 20% 16V
C413	1-126-157-11	s	ELECT 10uF 20% 16V
C414	1-126-157-11	s	ELECT 10uF 20% 16V
C415	1-126-934-11	s	ELECT 220uF 20% 16V
C416	1-126-157-11	s	ELECT 10uF 20% 16V
C417	1-126-163-11	s	ELECT 4.7uF 20% 50V
C418	1-126-934-11	s	ELECT 220uF 20% 16V
C420	1-124-465-00	s	ELECT 0.47uF 20% 50V
C421	1-126-157-11	s	ELECT 10uF 20% 16V
CN302	1-506-469-11	s	CONNECTOR, 4P, MALE
CN303	1-506-468-11	s	CONNECTOR, 3P, MALE
CN304	1-506-469-11	s	CONNECTOR, 4P, MALE
CN305	1-506-469-11	s	CONNECTOR, 4P, MALE
CN306	1-506-468-11	s	CONNECTOR, 3P, MALE
CN307	1-506-473-11	s	CONNECTOR, 8P, MALE
CN308	1-506-471-11	s	CONNECTOR, 6P, MALE
CN309	1-506-471-11	s	CONNECTOR, 6P, MALE
CN310	1-506-474-11	s	CONNECTOR, 9P, MALE
CN311	1-506-478-11	s	CONNECTOR, 13P, MALE
CN312	1-506-475-11	s	CONNECTOR, 10P, MALE
CN313	1-506-472-11	s	CONNECTOR, 7P, MALE
CN315	1-506-468-11	s	CONNECTOR, 3P, MALE
CN316	1-506-468-11	s	CONNECTOR, 3P, MALE
CN317	1-506-471-11	s	CONNECTOR, 6P, MALE
D2	8-719-104-34	s	DIODE 1S2836
D8	8-719-400-18	s	DIODE MA152WK
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D203	8-719-400-18	s	DIODE MA152WK
D205	8-719-400-18	s	DIODE MA152WK
D206	8-719-400-18	s	DIODE MA152WK
D206 *1	NOT IN USE.		
D301	8-719-400-18	s	DIODE MA152WK
D302	8-719-400-18	s	DIODE MA152WK
D303	8-719-400-18	s	DIODE MA152WK
D306	8-719-400-18	s	DIODE MA152WK
D306 *1	NOT IN USE.		
D308	8-719-104-34	s	DIODE 1S2836
D309	8-719-400-18	s	DIODE MA152WK

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(AU-179A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D310	8-719-104-34	s	DIODE 1S2836
D401	8-719-200-02	s	DIODE 10E2
D402	8-719-200-02	s	DIODE 10E2
D403	8-719-109-74	s	DIODE RD4.3ES-B1
D404	8-719-911-19	s	DIODE 1SS119
D405	8-719-109-88	s	DIODE RD5.6ES-B1
D406	8-719-400-18	s	DIODE MA152WK
D407	8-719-109-81	s	DIODE RD4.7ES-B2
D409	8-719-400-18	s	DIODE MA152WK
D410	8-719-911-19	s	DIODE 1SS119
D411	8-719-911-19	s	DIODE 1SS119
D412	8-719-200-02	s	DIODE 10E2
D413	8-719-200-02	s	DIODE 10E2
D414	8-719-110-03	s	DIODE RD7.5ES-B2
FL1	1-236-203-11	s	FILTER, BAND-PASS 1.3MHz
FL2	1-236-204-11	s	FILTER, BAND-PASS 1.7MHz
FL3	1-236-570-11	s	FILTER, BAND-PASS 1.4MHz
FL4	1-236-569-11	s	FILTER, BAND-PASS 1.8MHz
FL201	1-239-008-11	s	FILTER, LOW-PASS 110KHz
FL301	1-239-008-11	s	FILTER, LOW-PASS 110KHz
IC1	8-759-420-15	s	IC AN3932S
IC2	8-759-420-18	s	IC AN3972FC
IC3	8-759-064-91	s	IC NJM2233BL
IC4	8-759-064-91	s	IC NJM2233BL
IC5	8-759-035-93	s	IC TC7S32F
IC201	8-759-805-20	s	IC LA7297
IC202	8-752-057-20	s	IC CXA1102P
IC203	8-759-602-49	s	IC M5201P
IC204	8-759-602-49	s	IC M5201P
IC205	8-759-000-48	s	IC MC14052BCP
IC206	8-759-705-58	s	IC NJM4558D-D
IC207	8-759-705-58	s	IC NJM4558D-D
IC301	8-759-805-20	s	IC LA7297
IC302	8-752-057-20	s	IC CXA1102P
IC303	8-759-602-49	s	IC M5201P
IC304	8-759-602-49	s	IC M5201P
IC307	8-759-602-49	s	IC M5201P
IC308	8-759-234-77	s	IC TC4S66F
IC401	8-759-708-09	s	IC NJM78L09A
IC401 *1	8-759-982-25	s	IC RC78L09A
L2	1-410-470-11	s	INDUCTOR 10uH
L3	1-410-482-31	s	INDUCTOR 100uH
L201	1-410-088-21	s	INDUCTOR 12uH
L202	1-410-091-31	s	INDUCTOR 22uH
L301	1-410-088-21	s	INDUCTOR 12uH
L302	1-410-091-31	s	INDUCTOR 22uH
L401	1-410-120-11	s	INDUCTOR 1.2uH
L402	1-410-120-11	s	INDUCTOR 1.2uH
LV201	DELETED.		
LV201 *1	1-410-853-21	s	COIL, VAR 4.5uH
LV301	DELETED.		
LV301 *1	1-410-853-21	s	COIL, VAR 4.5uH
LV401	1-414-095-11	s	COIL, VAR 390uH
LV402	1-414-095-11	s	COIL, VAR 390uH
Q4	8-729-100-66	s	TRANSISTOR 2SC1623
Q5	8-729-901-06	s	TRANSISTOR DTA144EK
Q8	8-729-901-06	s	TRANSISTOR DTA144EK

(AU-179A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q10	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q12	8-729-100-66	s	TRANSISTOR 2SC1623
Q13	8-729-100-66	s	TRANSISTOR 2SC1623
Q14	8-729-901-01	s	TRANSISTOR DTC144EK
Q15	8-729-901-01	s	TRANSISTOR DTC144EK
Q16	8-729-901-06	s	TRANSISTOR DTA144EK
Q17	8-729-901-06	s	TRANSISTOR DTA144EK
Q18	8-729-901-01	s	TRANSISTOR DTC144EK
Q20	8-729-202-38	s	TRANSISTOR 2SC3326N
Q21	8-729-202-38	s	TRANSISTOR 2SC3326N
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-901-01	s	TRANSISTOR DTC144EK
Q204	8-729-901-01	s	TRANSISTOR DTC144EK
Q205	8-729-100-66	s	TRANSISTOR 2SC1623
Q206	8-729-901-01	s	TRANSISTOR DTC144EK
Q209	8-729-901-01	s	TRANSISTOR DTC144EK
Q217	8-729-202-38	s	TRANSISTOR 2SC3326N
Q218	8-729-100-66	s	TRANSISTOR 2SC1623
Q219	8-729-202-38	s	TRANSISTOR 2SC3326N
Q223	DELETED.		
Q223 *1	8-729-901-01	s	TRANSISTOR DTC144EK
Q224	DELETED.		
Q224 *1	8-729-202-38	s	TRANSISTOR 2SC3326N
Q225	DELETED.		
Q225 *1	8-729-901-01	s	TRANSISTOR DTC144EK
Q227	8-729-901-01	s	TRANSISTOR DTC144EK
Q230	8-729-100-66	s	TRANSISTOR 2SC1623
Q230 *1	NOT IN USE.		
Q231	8-729-100-66	s	TRANSISTOR 2SC1623
Q231 *1	NOT IN USE.		
Q232	8-729-100-66	s	TRANSISTOR 2SC1623
Q232 *1	NOT IN USE.		
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q304	8-729-901-01	s	TRANSISTOR DTC144EK
Q305	8-729-100-66	s	TRANSISTOR 2SC1623
Q306	8-729-901-01	s	TRANSISTOR DTC144EK
Q307	8-729-901-01	s	TRANSISTOR DTC144EK
Q309	8-729-901-01	s	TRANSISTOR DTC144EK
Q312	8-729-100-66	s	TRANSISTOR 2SC1623
Q313	8-729-901-06	s	TRANSISTOR DTA144EK
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q317	8-729-202-38	s	TRANSISTOR 2SC3326N
Q318	8-729-100-66	s	TRANSISTOR 2SC1623
Q319	8-729-202-38	s	TRANSISTOR 2SC3326N
Q320	8-729-202-38	s	TRANSISTOR 2SC3326N
Q322	8-729-901-06	s	TRANSISTOR DTA144EK
Q323	8-729-901-01	s	TRANSISTOR DTC144EK
Q324	8-729-202-38	s	TRANSISTOR 2SC3326N
Q325	DELETED.		
Q325 *1	8-729-901-01	s	TRANSISTOR DTC144EK
Q326	8-729-202-38	s	TRANSISTOR 2SC3326N
Q327	8-729-901-01	s	TRANSISTOR DTC144EK
Q328	8-729-100-66	s	TRANSISTOR 2SC1623
Q329	8-729-202-38	s	TRANSISTOR 2SC3326N
Q330	8-729-100-66	s	TRANSISTOR 2SC1623
Q330 *1	NOT IN USE.		
Q331	8-729-100-66	s	TRANSISTOR 2SC1623
Q331 *1	NOT IN USE.		

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(AU-179A BOARD)

Ref. No. or Q'ty		Part No.	SP	Description
Q332		8-729-100-66	s	TRANSISTOR 2SC1623
Q332	*1	NOT IN USE.		
Q401		8-729-140-93	s	TRANSISTOR 2SB733-34
Q403		8-729-140-96	s	TRANSISTOR 2SD774-4
Q404		8-729-901-01	s	TRANSISTOR DTC144EK
Q406		8-729-320-60	s	TRANSISTOR 2SD788-34
Q407		8-729-100-66	s	TRANSISTOR 2SC1623
Q408		8-729-140-93	s	TRANSISTOR 2SB733-34
Q409		8-729-100-66	s	TRANSISTOR 2SC1623
Q410		8-729-140-96	s	TRANSISTOR 2SD774-4
Q411		8-729-216-22	s	TRANSISTOR 2SA1162
Q412		8-729-100-66	s	TRANSISTOR 2SC1623
Q413		8-729-901-01	s	TRANSISTOR DTC144EK
Q414		8-729-901-01	s	TRANSISTOR DTC144EK
Q416		8-729-216-22	s	TRANSISTOR 2SA1162
Q417		8-729-100-66	s	TRANSISTOR 2SC1623
Q418		8-729-901-01	s	TRANSISTOR DTC144EK
Q419		8-729-140-93	s	TRANSISTOR 2SB733-34
Q420		8-729-100-66	s	TRANSISTOR 2SC1623
Q421		8-729-901-01	s	TRANSISTOR DTC144EK
Q422		8-729-901-06	s	TRANSISTOR DTA144EK
Q423		8-729-320-60	s	TRANSISTOR 2SD788-34
Q424		8-729-901-01	s	TRANSISTOR DTC144EK
Q425		8-729-119-77	s	TRANSISTOR 2SA1175-FEK
R1		1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R2		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R3		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R5		1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R6		1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R7		1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R8		1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R9		1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R10		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R11		1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R12		1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R13		1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R14		1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R15		1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R16		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R17		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R18		1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R20		DELETED.		
R20	*1	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R21		1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R22		1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R23		1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R24		1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R25		1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R29		1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R30		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R31		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R32		1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R33		1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R36		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R41		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R42		1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R43		1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R44		1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R46		1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

(AU-179A BOARD)

Ref. No. or Q'ty		Part No.	SP	Description
R47		1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R48		1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R49		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R50		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R51		1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R52		1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R53		1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R55		1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R56		1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R57		1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R58		1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R59		1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R60		1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R64		1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R74		1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R77		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R78		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R79		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R80		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R81		1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R82		1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R83		1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R84		1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R85		1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R86		1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R87		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R88		1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R89		1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R95		1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R96		DELETED.		
R96	*1	1-216-295-00	s	METAL, CHIP 0 5% 1/10W
R97		DELETED.		
R97	*1	1-216-295-00	s	METAL, CHIP 0 5% 1/10W
R201		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R202		1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R203		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R205		DELETED.		
R205	*1	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R206		1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R207		1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R208		1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R209		1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R210		1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R211		1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R213		1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R214		1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R216		1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R216	*1	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R216		1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R217		1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R218		1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R219		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R220		1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R221		1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R222		1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R223		1-216-662-11	s	METAL, CHIP 3K 0.5% 1/10W
R224		1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R225		1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R226		1-216-690-11	s	METAL, CHIP 43K 0.5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(AU-179A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R227	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R228	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R229	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R229 *1	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R230	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R232	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R232 *1	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R235	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R236	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R237	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R238	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R238 *1	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R239	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R239 *1	1-249-429-11	s	CARBON 10K 5% 1/4W
R240	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R240 *1	1-249-429-11	s	CARBON 10K 5% 1/4W
R241	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R241 *1	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R242	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R242 *1	NOT IN USE.		
R243	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R243 *1	NOT IN USE.		
R250	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R251	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R253	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R254	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R257	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R258	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R259	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R261	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R272	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R273	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R274	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R275	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R279	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R280	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R281	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R282	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R286	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R287	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R288	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R289	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R290	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R291	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R295	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R301	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R302	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R303	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R305	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R306	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R307	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R308	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R309	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R310	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R311	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R313	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R314	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W

(AU-179A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R316	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R316 *1	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R317	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R318	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R320	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R321	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R322	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R323	1-216-662-11	s	METAL, CHIP 3K 0.5% 1/10W
R324	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R326	1-216-690-11	s	METAL, CHIP 43K 0.5% 1/10W
R327	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R328	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R329	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R329 *1	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R332	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R332 *1	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R335	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R336	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R337	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R338	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R338 *1	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R339	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R340	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R340 *1	1-249-429-11	s	CARBON 10K 5% 1/4W
R341	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R341 *1	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R342	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R342 *1	NOT IN USE.		
R343	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R343 *1	NOT IN USE.		
R345	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R346	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R348	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R350	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R351	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R352	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R357	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R358	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R359	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R361	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R362	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R363	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R363 *1	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R364	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R365	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R366	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R367	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R368	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R369	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R372	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R373	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R374	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R375	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R377	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R378	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R379	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R380	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R381	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(AU-179A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R382	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R383	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R384	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R386	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R387	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R388	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R389	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R390	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R391	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R392	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R393	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R394	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R395	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R396	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R397	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R398	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R399	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R401	1-249-381-11	s	CARBON 1 5% 1/4W
R402	1-249-381-11	s	CARBON 1 5% 1/4W
R403	1-216-298-00	s	METAL 2.2 5% 1/10W
R404	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R405	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R406	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R407	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R408	1-216-304-11	s	METAL 3.3 5% 1/10W
R411	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R412	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R413	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R414	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R416	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R417	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R418	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R419	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R420	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R421	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R422	1-216-304-11	s	METAL 3.3 5% 1/10W
R423	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R424	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R425	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R426	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R426 *1	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R428	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R429	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R430	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R433	1-249-407-11	s	CARBON 150 5% 1/4W
R434	1-216-017-00	s	METAL, CHIP 47 5% 1/10W
R435	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R436	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R439	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R440	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R441	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R442	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R443	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R446	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R447	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R448	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R449	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

(AU-179A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R450	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
RJ1	1-216-295-00	s	METAL, CHIP 0-OHM
RJ2	1-216-295-00	s	METAL, CHIP 0-OHM
RJ3	1-216-295-00	s	METAL, CHIP 0-OHM
RJ4	1-216-295-00	s	METAL, CHIP 0-OHM
RJ5	1-216-295-00	s	METAL, CHIP 0-OHM
RJ6	1-216-295-00	s	METAL, CHIP 0-OHM
RJ7	1-216-295-00	s	METAL, CHIP 0-OHM
RJ8	1-216-295-00	s	METAL, CHIP 0-OHM
RJ9	1-216-295-00	s	METAL, CHIP 0-OHM
RJ10	1-216-295-00	s	METAL, CHIP 0-OHM
RJ11	1-216-295-00	s	METAL, CHIP 0-OHM
RJ12	1-216-295-00	s	METAL, CHIP 0-OHM
RJ13	1-216-295-00	s	METAL, CHIP 0-OHM
RJ14	1-216-295-00	s	METAL, CHIP 0-OHM
RJ15	1-216-295-00	s	METAL, CHIP 0-OHM
RJ16	1-216-295-00	s	METAL, CHIP 0-OHM
RJ17	1-216-295-00	s	METAL, CHIP 0-OHM
RJ18	1-216-295-00	s	METAL, CHIP 0-OHM
RJ19	1-216-295-00	s	METAL, CHIP 0-OHM
RJ21	1-216-295-00	s	METAL, CHIP 0-OHM
RJ22	1-216-295-00	s	METAL, CHIP 0-OHM
RJ23	1-216-295-00	s	METAL, CHIP 0-OHM
RJ24	1-216-295-00	s	METAL, CHIP 0-OHM
RJ25	1-216-295-00	s	METAL, CHIP 0-OHM
RJ26	1-216-295-00	s	METAL, CHIP 0-OHM
RJ27	1-216-295-00	s	METAL, CHIP 0-OHM
RJ28	1-216-295-00	s	METAL, CHIP 0-OHM
RJ29	1-216-295-00	s	METAL, CHIP 0-OHM
RJ30	1-216-295-00	s	METAL, CHIP 0-OHM
RJ31	1-216-295-00	s	METAL, CHIP 0-OHM
RV1	1-238-020-11	s	RES, ADJ CARBON 100K
RV2	1-241-632-11	s	RES, ADJ CARBON 47K
RV3	1-230-522-11	s	RES, ADJ METAL 4.7K
RV4	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV5	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV6	1-241-632-11	s	RES, ADJ CARBON 47K
RV7	1-230-522-11	s	RES, ADJ METAL 4.7K
RV8	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV9	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV10	1-238-020-11	s	RES, ADJ CARBON 100K
RV201	1-241-631-11	s	RES, ADJ CARBON 22K
RV202	1-241-632-11	s	RES, ADJ CARBON 47K
RV204	1-241-628-11	s	RES, ADJ CARBON 2.2K
RV205	1-238-020-11	s	RES, ADJ CARBON 100K
RV205 *1	1-238-021-11	s	RES, ADJ CARBON 220K
RV206	1-241-631-11	s	RES, ADJ CARBON 22K
RV301	1-241-631-11	s	RES, ADJ CARBON 22K
RV302	1-241-632-11	s	RES, ADJ CARBON 47K
RV304	1-241-628-11	s	RES, ADJ CARBON 2.2K
RV305	1-238-020-11	s	RES, ADJ CARBON 100K
RV305 *1	1-238-021-11	s	RES, ADJ CARBON 220K
RV306	1-241-631-11	s	RES, ADJ CARBON 22K
RY401	1-515-614-11	s	RELAY
RY402	1-515-614-11	s	RELAY
T401	1-433-330-11	s	TRANSFORMER, BIAS OSCILLATION
T402	1-406-349-11	s	TRANSFORMER, OSCILLATION

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

CP-196 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-372-A	o	MOUNTED CIRCUIT BOARD, CP-196
C7	1-126-794-11	s	ELECT 4.7uF 20% 50V
C8	1-126-794-11	s	ELECT 4.7uF 20% 50V
C10	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C11	1-126-786-11	s	ELECT 47uF 20% 16V
C12	1-124-584-00	s	ELECT 100uF 20% 10V
C13	1-124-584-00	s	ELECT 100uF 20% 10V
C14	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C15	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C16	1-124-584-00	s	ELECT 100uF 20% 10V
C20	1-124-584-00	s	ELECT 100uF 20% 10V
C21	1-124-584-00	s	ELECT 100uF 20% 10V
C22	1-126-786-11	s	ELECT 47uF 20% 16V
C23	1-126-794-11	s	ELECT 4.7uF 20% 50V
C24	1-126-794-11	s	ELECT 4.7uF 20% 50V
CN1	1-691-274-11	s	CONNECTOR, BNC, FEMALE
CN2	1-573-590-12	s	CONNECTOR, CIRCULAR 4P, FEMALE
CN3	1-691-274-11	s	CONNECTOR, BNC, FEMALE
CN4	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN5	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN6	1-691-274-11	s	CONNECTOR, BNC, FEMALE
CN501	1-506-483-21	s	CONNECTOR, 4P, MALE
CN503	1-506-486-11	s	CONNECTOR, 7P, MALE
CN504	1-506-484-11	s	CONNECTOR, 5P, MALE
CN506	1-506-483-21	o	CONNECTOR, 4P, MALE
CN510	1-506-481-11	s	CONNECTOR, 2P, MALE
CN511	1-506-484-11	s	CONNECTOR, 5P, MALE
D1	8-719-106-08	s	DIODE RD6.2M-B2
IC1	8-759-982-04	s	IC RC5532M
IC2	8-759-982-04	s	IC RC5532M
IC3	8-759-710-86	s	IC NJM2233BM
L1	1-410-482-31	s	INDUCTOR 100uH
R14	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R15	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R16	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R17	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R18	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R19	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R20	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R21	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R22	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R27	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R28	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R29	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R30	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R31	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R32	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
RJ1	1-216-295-00	s	METAL, CHIP 0-OHM
RJ2	1-216-295-00	s	METAL, CHIP 0-OHM
RJ3	1-216-295-00	s	METAL, CHIP 0-OHM
RJ4	1-216-295-00	s	METAL, CHIP 0-OHM
RJ5	1-216-295-00	s	METAL, CHIP 0-OHM
RJ6	1-216-295-00	s	METAL, CHIP 0-OHM
RJ7	1-216-295-00	s	METAL, CHIP 0-OHM
S1	1-570-145-11	s	SWITCH, SLIDE

CP-197 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-373-A	o	MOUNTED CIRCUIT BOARD, CP-197
C1	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C2	1-126-786-11	s	ELECT 47uF 20% 16V
C3	1-126-786-11	s	ELECT 47uF 20% 16V
C4	1-126-786-11	s	ELECT 47uF 20% 16V
C5	1-126-786-11	s	ELECT 47uF 20% 16V
C25	1-126-786-11	s	ELECT 47uF 20% 16V
C26	1-126-786-11	s	ELECT 47uF 20% 16V
CN5	1-573-590-12	s	CONNECTOR, CIRCULAR 4P, FEMALE
CN6	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN7	1-691-273-11	s	JACK, PIN 1P, FEMALE
CN8	1-691-274-11	s	CONNECTOR, BNC, FEMALE
CN9	1-573-602-11	s	CONNECTOR, DIP 8P, FEMALE
CN11	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN502	1-506-488-11	o	CONNECTOR, 9P, MALE
CN505	1-506-487-11	s	CONNECTOR, 8P, MALE
CN507	1-506-485-11	s	CONNECTOR, 6P, MALE
CN508	1-506-484-11	s	CONNECTOR, 5P, MALE
CN509	1-506-481-11	s	CONNECTOR, 2P, MALE
D1	8-719-800-76	s	DIODE 1SS226
D2	8-719-800-76	s	DIODE 1SS226
D3	8-719-800-76	s	DIODE 1SS226
D4	8-719-800-76	s	DIODE 1SS226
D5	8-719-800-76	s	DIODE 1SS226
D6	8-719-106-08	s	DIODE RD6.2M-B2
D18	8-719-200-02	s	DIODE 10E2
D19	8-719-200-02	s	DIODE 10E2
IC1	8-759-009-06	s	IC MC14052BF
IC5	8-759-982-04	s	IC RC5532M
Q7	8-729-202-38	s	TRANSISTOR 2SC3326N
Q8	8-729-202-38	s	TRANSISTOR 2SC3326N
Q10	8-729-202-38	s	TRANSISTOR 2SC3326N
Q11	8-729-202-38	s	TRANSISTOR 2SC3326N
Q12	8-729-202-38	s	TRANSISTOR 2SC3326N
Q13	8-729-202-38	s	TRANSISTOR 2SC3326N
Q14	8-729-140-93	s	TRANSISTOR 2SB733-34
R2	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R3	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R4	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R5	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R6	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R7	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R8	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R9	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R10	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R11	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R12	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R13	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R33	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R34	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R35	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R36	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R38	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R39	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R40	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R41	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(CP-197 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R42	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R43	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
RY1	1-515-614-11	s	RELAY

CR-42 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-528-A	o	MOUNTED CIRCUIT BOARD, CR-42
C501	1-124-589-11	s	ELECT 47uF 20% 16V
C502	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C503	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C504	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C505	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C506	1-126-162-11	s	ELECT 3.3uF 20% 50V
C507	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C508	1-126-162-11	s	ELECT 3.3uF 20% 50V
C509	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C510	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C511	1-126-162-11	s	ELECT 3.3uF 20% 50V
C512	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C513	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C514	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C515	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C516	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C517	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C518	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C519	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C520	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C521	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C522	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C523	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C524	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C525	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C526	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C527	1-126-301-11	s	ELECT 1uF 20% 50V
C528	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C529	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C530	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C531	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C532	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C533	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C534	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C535	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C536	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C537	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C538	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C539	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C540	1-126-301-11	s	ELECT 1uF 20% 50V
C541	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C542	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C543	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C544	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C545	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C546	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C547	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C548	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C549	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C550	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C551	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C553	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C554	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C555	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C604	1-163-087-00	s	CERAMIC, CHIP 4pF 50V

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C605	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C606	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C607	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C608	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C609	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C610	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C611	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C612	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C613	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C614	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C615	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C616	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C617	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C618	1-124-589-11	s	ELECT 47uF 20% 16V
C619	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C620	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C621	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C622	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C623	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C624	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C625	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C626	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C627	1-131-377-00	s	TANTALUM 10uF 10% 10V
C628	1-131-342-00	s	TANTALUM 0.15uF 10% 35V
C629	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C630	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C631	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C632	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C633	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C634	1-163-114-00	s	CERAMIC, CHIP 75pF 5% 50V
C635	1-163-124-00	s	CERAMIC, CHIP 200pF 5% 50V
C636	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C637	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C638	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C639	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C640	1-126-177-11	s	ELECT 100uF 20% 10V
C641	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C642	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C643	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C644	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C645	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C646	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C647	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C648	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C649	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C651	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C653	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C654	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C655	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C655 *1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C656	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C657	1-126-923-11	s	ELECT 220uF 20% 10V
C658	1-163-222-11	s	CERAMIC, CHIP 5pF 0.25pF 50V
C659	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C660	1-124-463-00	s	ELECT 0.1uF 20% 50V
C661	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C662	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C664	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C665	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C666	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C667	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C670	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C671	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C675	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C676	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C677	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C678	1-131-341-00	s	TANTALUM 0.1uF 10% 35V
C679	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C680	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C681	1-124-589-11	s	ELECT 47uF 20% 16V
C682	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C683	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C687	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C689	1-124-589-11	s	ELECT 47uF 20% 16V
C690	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C691	1-163-134-00	s	CERAMIC, CHIP 510pF 5% 50V
C692	1-124-455-00	s	ELECT 100uF 20% 16V
C693	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C694	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C695	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C697	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C698	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C699	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C700	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C701	1-163-088-00	s	CERAMIC, CHIP 5pF 50V
C702	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C703	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C704	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C705	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C706	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C707	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C708	1-163-126-00	s	CERAMIC, CHIP 240pF 5% 50V
C709	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C710	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C711	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C712	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C713	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C715	1-124-589-11	s	ELECT 47uF 20% 16V
C716	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C717	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C718	1-126-177-11	s	ELECT 100uF 20% 10V
C720	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C721	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C723	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C725	1-107-085-00	s	MICA 100pF 5% 50V
C730	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C731	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C732	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C733	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C734	1-124-589-11	s	ELECT 47uF 20% 16V
C735	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C736	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C737	1-124-589-11	s	ELECT 47uF 20% 16V
C738	1-130-484-00	s	MYLAR 0.012uF 5% 50V
C740	1-161-772-11	s	CERAMIC 0.1uF 10% 25V
C801	1-124-589-11	s	ELECT 47uF 20% 16V
C802	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C803	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C804	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C805	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C806	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C807	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C808	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C809	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C810	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C811	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C812	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C813	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C814	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C815	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C816	1-126-923-11	s	ELECT 220uF 20% 10V
C817	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C818	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C819	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C820	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C821	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C822	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C823	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C824	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C825	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C826	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C828	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C829	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C830	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C831	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C832	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C833	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C834	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C835	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C836	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C837	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C838	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C840	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C841	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C842	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C843	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C844	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C845	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C846	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C911	1-124-455-00	s	ELECT 100uF 20% 16V
C912	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C913	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C914	1-124-589-11	s	ELECT 47uF 20% 16V
C915	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C916	1-126-177-11	s	ELECT 100uF 20% 10V
C917	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C918	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C921	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C922	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C923	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
CN212	1-562-686-11	o	CONNECTOR, FPC 26P
CN214	1-506-491-11	o	CONNECTOR, 12P, MALE
CN215	1-506-482-11	s	CONNECTOR, 3P, MALE
CV601	1-141-276-00	s	CAP, TRIMMER 20pF
CV602	1-141-365-11	s	CAP, TRIMMER 50pF
CV603	1-141-365-11	s	CAP, TRIMMER 50pF

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Ref. No. or Q'ty	Part No.	SP	Description
CV800	1-141-276-00	s	CAP, TRIMMER 20pF
CV801	1-141-365-11	s	CAP, TRIMMER 50pF
CV802	1-141-365-11	s	CAP, TRIMMER 50pF
D501	8-719-400-18	s	DIODE MA152WK
D600	8-719-109-81	s	DIODE RD4.7ES-B2
D600	*1		NOT IN USE.
D700	8-719-800-76	s	DIODE 1SS226
D801	8-719-800-76	s	DIODE 1SS226
D802	8-719-400-18	s	DIODE MA152WK
D803	8-719-400-18	s	DIODE MA152WK
FL601	1-236-835-11	s	FILTER, BAND-PASS 4.43MHz
FL602	1-235-437-11	s	FILTER, BAND-PASS 4.43MHz
FL603	1-236-928-11	s	FILTER, LOW-PASS 1.0MHz
FL604	1-231-280-00	s	FILTER CERAMIC 4.43MHZ
FL605	1-239-325-11	s	FILTER, BAND-PASS 5.06MHz
IC501	8-752-333-24	s	IC CXL1506M
IC601	8-759-710-86	s	IC NJM2233BM
IC602	8-752-322-34	s	IC CXL5003M
IC603	8-759-634-93	s	IC M52059AFP
IC604	8-759-201-47	s	IC TA7357AP
IC605	8-759-710-86	s	IC NJM2233BM
IC606	8-759-710-86	s	IC NJM2233BM
IC607	8-759-710-86	s	IC NJM2233BM
IC608	8-759-710-86	s	IC NJM2233BM
IC901	8-759-520-06	s	IC XRA17809T
L501	1-410-482-31	s	INDUCTOR 100uH
L502	1-410-470-11	s	INDUCTOR 10uH
L503	1-410-478-11	s	INDUCTOR 47uH
L504	1-408-414-00	s	INDUCTOR 27uH
L505	1-408-413-00	s	INDUCTOR 22uH
L506	1-408-413-00	s	INDUCTOR 22uH
L507	1-408-414-00	s	INDUCTOR 27uH
L508	1-408-414-00	s	INDUCTOR 27uH
L509	1-408-414-00	s	INDUCTOR 27uH
L510	1-408-413-00	s	INDUCTOR 22uH
L511	1-408-414-00	s	INDUCTOR 27uH
L512	1-410-470-11	s	INDUCTOR 10uH
L513	1-408-413-00	s	INDUCTOR 22uH
L514	1-408-414-00	s	INDUCTOR 27uH
L515	1-408-413-00	s	INDUCTOR 22uH
L516	1-410-464-11	s	INDUCTOR 3.3uH
L518	1-410-470-11	s	INDUCTOR 10uH
L601	1-410-482-31	s	INDUCTOR 100uH
L602	1-408-413-00	s	INDUCTOR 22uH
L603	1-408-424-00	s	INDUCTOR 180uH
L604	1-408-413-00	s	INDUCTOR 22uH
L605	1-410-482-31	s	INDUCTOR 100uH
L606	1-408-425-00	s	INDUCTOR 220uH
L607	1-410-482-31	s	INDUCTOR 100uH
L608	1-410-482-31	s	INDUCTOR 100uH
L609	1-410-471-11	s	INDUCTOR 12uH
L611	1-408-420-00	s	INDUCTOR 82uH
L612	1-408-424-00	s	INDUCTOR 180uH
L613	1-410-476-11	s	INDUCTOR 33uH
L615	1-410-478-11	s	INDUCTOR 47uH
L616	1-410-478-11	s	INDUCTOR 47uH
L618	1-410-482-31	s	INDUCTOR 100uH
L619	1-410-482-31	s	INDUCTOR 100uH

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Ref. No. or Q'ty	Part No.	SP	Description
L620	1-410-482-31	s	INDUCTOR 100uH
L700	1-410-482-31	s	INDUCTOR 100uH
L701	1-408-429-00	s	INDUCTOR 470uH
L801	1-408-419-00	s	INDUCTOR 68uH
L802	1-408-422-00	s	INDUCTOR 120uH
L803	1-408-413-00	s	INDUCTOR 22uH
L804	1-408-420-00	s	INDUCTOR 82uH
L805	1-410-473-11	s	INDUCTOR 18uH
L806	1-410-471-11	s	INDUCTOR 12uH
L807	1-408-411-00	s	INDUCTOR 15uH
L808	1-408-411-00	s	INDUCTOR 15uH
L809	1-408-427-00	s	INDUCTOR 330uH
PS101	1-532-605-00	s	LINK, IC 0.4A
Q502	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q503	8-729-216-22	s	TRANSISTOR 2SA1162
Q504	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q505	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q506	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q507	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q508	8-729-216-22	s	TRANSISTOR 2SA1162
Q509	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q510	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q511	8-729-216-22	s	TRANSISTOR 2SA1162
Q512	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q513	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q514	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q515	8-729-903-10	s	TRANSISTOR FMW1
Q516	8-729-903-97	s	TRANSISTOR FMS1FE
Q517	8-729-903-97	s	TRANSISTOR FMS1FE
Q518	8-729-903-10	s	TRANSISTOR FMW1
Q519	8-729-907-46	s	TRANSISTOR IMZ1
Q520	8-729-903-10	s	TRANSISTOR FMW1
Q521	8-729-903-97	s	TRANSISTOR FMS1FE
Q522	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q523	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q524	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q525	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q526	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q527	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q528	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q529	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q530	8-729-903-97	s	TRANSISTOR FMS1FE
Q531	8-729-903-10	s	TRANSISTOR FMW1
Q532	8-729-903-97	s	TRANSISTOR FMS1FE
Q533	8-729-903-10	s	TRANSISTOR FMW1
Q534	8-729-907-46	s	TRANSISTOR IMZ1
Q535	8-729-903-10	s	TRANSISTOR FMW1
Q536	8-729-903-97	s	TRANSISTOR FMS1FE
Q537	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q538	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q539	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q540	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q541	8-729-901-01	s	TRANSISTOR DTC144EK
Q543	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q545	8-729-901-01	s	TRANSISTOR DTC144EK
Q548	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q549	8-729-202-38	s	TRANSISTOR 2SC3326N
Q550	8-729-903-97	s	TRANSISTOR FMS1FE

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Ref. No. or Q'ty	Part No.	SP	Description
Q601	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q602	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q604	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q605	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q606	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q607	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q608	8-729-216-22	s	TRANSISTOR 2SA1162
Q609	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q610	8-729-216-22	s	TRANSISTOR 2SA1162
Q611	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q612	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q613	8-729-901-01	s	TRANSISTOR DTC144EK
Q614	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q615	8-729-901-01	s	TRANSISTOR DTC144EK
Q616	8-729-901-01	s	TRANSISTOR DTC144EK
Q618	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q619	8-729-901-01	s	TRANSISTOR DTC144EK
Q620	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q621	8-729-202-38	s	TRANSISTOR 2SC3326N
Q622	8-729-901-01	s	TRANSISTOR DTC144EK
Q623	8-729-216-22	s	TRANSISTOR 2SA1162
Q629	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q630	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q631	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q632	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q634	8-729-901-01	s	TRANSISTOR DTC144EK
Q636	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q637	8-729-901-01	s	TRANSISTOR DTC144EK
Q638	8-729-901-01	s	TRANSISTOR DTC144EK
Q639	8-729-216-22	s	TRANSISTOR 2SA1162
Q640	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q641	8-729-901-01	s	TRANSISTOR DTC144EK
Q641 *1	8-729-203-25	s	TRANSISTOR 2SC3326N
Q642	8-729-901-01	s	TRANSISTOR DTC144EK
Q643	8-729-901-06	s	TRANSISTOR DTA144EK
Q644	8-729-216-22	s	TRANSISTOR 2SA1162
Q645	8-729-901-06	s	TRANSISTOR DTA144EK
Q646	8-729-900-89	s	TRANSISTOR DTC144ES
Q646 *1	NOT IN USE.		
Q647	8-729-900-89	s	TRANSISTOR DTC144ES
Q647 *1	NOT IN USE.		
Q700	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q701	8-729-202-38	s	TRANSISTOR 2SC3326N
Q702	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q703	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q704	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q705	8-729-901-01	s	TRANSISTOR DTC144EK
Q706	8-729-901-01	s	TRANSISTOR DTC144EK
Q707	8-729-202-38	s	TRANSISTOR 2SC3326N
Q708	8-729-202-38	s	TRANSISTOR 2SC3326N
Q710	8-729-203-48	s	TRANSISTOR 2SC3327-A
Q801	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q802	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q803	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q804	8-729-907-26	s	TRANSISTOR IMX1
Q805	8-729-903-10	s	TRANSISTOR FMW1
Q806	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q807	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q808	8-729-230-49	s	TRANSISTOR 2SC2712YG

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

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Ref. No. or Q'ty	Part No.	SP	Description
Q809	8-729-903-97	s	TRANSISTOR FMS1FE
Q810	8-729-903-10	s	TRANSISTOR FMW1
Q811	8-729-903-97	s	TRANSISTOR FMS1FE
Q812	8-729-903-10	s	TRANSISTOR FMW1
Q813	8-729-216-22	s	TRANSISTOR 2SA1162
Q814	8-729-907-26	s	TRANSISTOR IMX1
Q815	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q816	8-729-903-10	s	TRANSISTOR FMW1
Q817	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q818	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q819	8-729-216-22	s	TRANSISTOR 2SA1162
Q820	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q821	8-729-216-22	s	TRANSISTOR 2SA1162
Q822	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q823	8-729-216-22	s	TRANSISTOR 2SA1162
Q824	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q825	8-729-216-22	s	TRANSISTOR 2SA1162
Q826	8-729-216-22	s	TRANSISTOR 2SA1162
Q827	8-729-907-26	s	TRANSISTOR IMX1
Q828	8-729-907-26	s	TRANSISTOR IMX1
Q829	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q830	8-729-907-26	s	TRANSISTOR IMX1
Q831	8-729-216-22	s	TRANSISTOR 2SA1162
Q832	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q833	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q834	8-729-216-22	s	TRANSISTOR 2SA1162
Q835	8-729-216-22	s	TRANSISTOR 2SA1162
Q836	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q837	8-729-230-49	s	TRANSISTOR 2SC2712YG
R501	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R502	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R503	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R504	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R505	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R506	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R507	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R508	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R509	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R511	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R512	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R513	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R514	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R515	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R516	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R517	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R519	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R520	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R521	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R522	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R523	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R524	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R525	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R526	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R527	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R528	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R529	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R530	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R531	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R532	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R533	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R534	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R535	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R536	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R537	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R538	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R539	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R540	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R541	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R542	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R543	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R544	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R545	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R546	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R547	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R548	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R549	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R550	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R551	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R552	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R553	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R554	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R555	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R556	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R557	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R558	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R559	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R560	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R561	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R562	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R563	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R564	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R565	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R566	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R567	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R568	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R569	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R570	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R571	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R572	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R573	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R576	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R577	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R578	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R579	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R580	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R581	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R582	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R583	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R584	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R585	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R586	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R587	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R588	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R589	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R590	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R591	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

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Ref. No. or Q'ty	Part No.	SP	Description
R592	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R593	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R594	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R595	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R596	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R597	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R598	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R601	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R602	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R603	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R604	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R605	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R606	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R607	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R608	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R609	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R610	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R612	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R614	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R615	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R616	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R617	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R618	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R619	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R620	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R621	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R622	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R623	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R624	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R625	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R626	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R627	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R628	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R629	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R630	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R631	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R632	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R633	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R634	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R636	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R637	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R639	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R640	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R641	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R642	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R643	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R644	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R646	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R647	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R648	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R649	1-215-445-00	s	METAL 10K 1% 1/6W
R650	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R651	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R652	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R653	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R654	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R655	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R656	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R657	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R658	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R659	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R660	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R661	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R663	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R664	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R665	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R666	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R667	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R668	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R669	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R669 *1	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R670	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R671	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R672	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R673	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R674	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R676	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R677	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R678	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R679	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R680	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R681	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R682	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R683	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R684	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R685	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R686	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R687	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R688	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R689	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R690	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R693	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R694	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R695	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R696	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R697	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R698	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R699	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R700	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R701	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R704	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R705	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R706	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R708	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R712	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R714	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R715	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R716	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R719	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R721	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R722	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R723	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R724	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R725	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R726	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R727	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R729	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R730	1-216-041-00	s	METAL, CHIP 470 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R731	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R732	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R733	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R734	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R735	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R736	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R737	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R738	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R739	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R750	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R751	1-216-605-11	s	METAL 12 0.50% 1/10W
R752	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R753	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R754	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R755	1-216-623-11	s	METAL, CHIP 68 0.5% 1/10W
R756	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R757	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R758	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R759	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R760	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R761	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R762	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R763	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R764	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R765	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R766	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R767	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R768	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R768 *1	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R769	DELETED.		
R769 *1	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R772	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R773	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R774	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R775	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R776	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R777	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R778	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R779	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R780	1-217-666-31	s	RES, SHORTING 0.01 1/6W
R781	1-249-429-11	s	CARBON 10K 5% 1/4W
R782	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R782 *1	NOT IN USE.		
R783	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R783 *1	NOT IN USE.		
R801	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R802	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R803	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R804	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R805	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R806	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R807	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R808	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R809	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R810	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R811	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R812	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R813	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R814	1-216-043-00	s	METAL, CHIP 560 5% 1/10W

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R815	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R816	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R817	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R818	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R819	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R820	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R821	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R822	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R823	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R824	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R825	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R826	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R827	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R828	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R829	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R830	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R831	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R832	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R833	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R834	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R835	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R836	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R837	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R838	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R839	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R840	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R841	1-216-029-00	s	METAL, CHIP 150 5% 1/10W
R842	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R843	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R844	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R845	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R846	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R847	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R848	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R849	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R850	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R851	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R852	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R853	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R854	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R855	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R856	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R857	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R858	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R859	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R860	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R861	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R862	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R863	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R864	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R865	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R866	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R867	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R868	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R869	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W
R870	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R871	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R872	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R873	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R874	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R875	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R876	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R877	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R878	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R879	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R880	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R881	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R882	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R883	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R884	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R885	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R886	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R887	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R888	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R889	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R890	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R891	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R892	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R893	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R894	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R895	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R896	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R897	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R898	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R899	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R900	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R901	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R902	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R903	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R904	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R905	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R906	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R907	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R931	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R935	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R936	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R937	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R938	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R939	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R941	1-216-295-00	s	METAL, CHIP 0-OHM
R942	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R943	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R944	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R945	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R946	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R949	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R950	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R951	1-216-100-00	s	METAL 130K 0.50% 1/10W
R952	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R953	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R954	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R955	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R956	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R959	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R960	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R961	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R962	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
RV501	1-238-012-11	s	RES, ADJ CARBON 1K
RV502	1-238-011-11	s	RES, ADJ CARBON 470
RV601	1-238-012-11	s	RES, ADJ CARBON 1K
RV602	1-238-019-11	s	RES, ADJ CARBON 47K
RV603	1-238-017-11	s	RES, ADJ CARBON 22K
RV604	1-238-019-11	s	RES, ADJ CARBON 47K
RV606	1-238-017-11	s	RES, ADJ CARBON 22K
RV700	1-238-017-11	s	RES, ADJ CARBON 22K
RV800	1-238-011-11	s	RES, ADJ CARBON 470
RV801	1-238-011-11	s	RES, ADJ CARBON 470
RV802	1-238-011-11	s	RES, ADJ CARBON 470
RV860	1-238-013-11	s	RES, ADJ CARBON 2.2K
RV860 *3	1-238-015-11	s	RES, ADJ CARBON 4.7K
X601	1-567-504-81	s	OSCILLATOR, CRYSTAL 4.43MHz
X701	1-579-674-11	s	OSCILLATOR, CRYSTAL 4.46MHz

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

DP-166 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-643-491-11	o	PRINTED CIRCUIT BOARD, DP-166
D101	8-719-901-64	s	LED LT-9200D
D102	8-719-901-64	s	LED LT-9200D
D103	8-719-901-66	s	LED LT-9200N
D104	8-719-901-66	s	LED LT-9200N
D109	8-719-400-18	s	DIODE MA152WK
D110	8-719-400-18	s	DIODE MA152WK
D111	8-719-400-18	s	DIODE MA152WK
ND101	8-719-942-19	s	LED LB402VK
ND102	8-719-942-19	s	LED LB402VK
ND103	8-719-942-19	s	LED LB402VK
R101	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R102	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R103	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R106	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R107	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R108	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
S101	1-570-472-11	s	SWITCH, PUSH
S102	1-570-846-11	s	SWITCH, SLIDE

DR-153 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
2pcs	A-6756-022-A	o	MOUNTED CIRCUIT BOARD, DR-153
C1	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C2	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C3	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
CN1	1-568-260-21	s	CONNECTOR, 9P, MALE
CN2	1-568-260-21	s	CONNECTOR, 9P, MALE
CN3	1-568-260-21	s	CONNECTOR, 9P, MALE
IC1	8-759-207-46	s	IC TA7262P-LB
R1	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R2	1-216-045-00	s	METAL, CHIP 680 5% 1/10W

DR-167 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6715-460-A	o	MOUNTED CIRCUIT BOARD, DR-167
2pcs	7-685-871-01	s	SCREW +BVTT 3X6 (S)
C4	1-126-160-11	s	ELECT 1uF 20% 50V
C5	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C6	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C7	1-161-061-11	s	CERAMIC 0.068uF 10% 25V
C8	1-161-061-11	s	CERAMIC 0.068uF 10% 25V
C9	1-124-120-11	s	ELECT 220uF 20% 25V
C10	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C11	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C12	1-126-162-11	s	ELECT 3.3uF 20% 50V
C13	1-161-061-11	s	CERAMIC 0.068uF 10% 25V
CN633	1-506-482-11	s	CONNECTOR, 3P, MALE
CN636	1-691-285-11	s	CONNECTOR, 10P, FEMALE
CN637	1-691-285-11	s	CONNECTOR, 10P, FEMALE
D1	8-719-200-02	s	DIODE 10E2
D2	8-719-200-02	s	DIODE 10E2
IC1	8-759-234-03	s	IC TA8424F
IC2	8-719-939-11	s	PHOTO INTERRUPTER GP-2S09-B
IC3	8-719-939-11	s	PHOTO INTERRUPTER GP-2S09-B
IC4	8-719-939-11	s	PHOTO INTERRUPTER GP-2S09-B
R1	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R2	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R3	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R4	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R5	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R6	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R7	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R8	⚠1-249-377-11	s	CARBON 0.47 5% 1/4W
R18	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R19	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R20	1-216-303-11	s	METAL, CHIP 3 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

DR-176A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-369-A	o	MOUNTED CIRCUIT BOARD, DR-176A
1pc	3-173-481-02	o	SHEET, INSULATING, DR
3pcs	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3X6
C1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C3	1-124-589-11	s	ELECT 47uF 20% 16V
C4	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C5	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C14	1-124-589-11	s	ELECT 47uF 20% 16V
C15	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C16	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C17	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C18	1-126-163-11	s	ELECT 4.7uF 20% 50V
C20	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C21	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C22	1-130-491-00	s	MYLAR 0.047uF 5% 50V
CN631	1-563-493-11	s	CONNECTOR, FPC 28P
CN632	1-506-488-11	s	CONNECTOR, 9P, MALE
CN638	1-691-271-11	s	CONNECTOR, 10P, MALE
CN639	1-691-271-11	s	CONNECTOR, 10P, MALE
IC5	8-759-710-77	s	IC NJM4560MD
Q1	8-729-140-96	s	TRANSISTOR 2SD774-4
Q2	8-729-924-90	s	TRANSISTOR 2SB1370-EF
R9	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R10	⚠1-216-365-00	s	METAL 0.47 5% 2W
R11	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R12	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R13	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R14	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R15	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R16	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R17	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R21	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R22	1-216-033-00	s	METAL, CHIP 220 5% 1/10W

DUS-445 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
C318	1-126-160-11	s	ELECT 1uF 20% 50V
C319	1-126-160-11	s	ELECT 1uF 20% 50V
C350	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
CN153	1-566-095-11	o	CONNECTOR, BB 6P, MALE
CN154	1-566-095-11	o	CONNECTOR, BB 6P, MALE
IC307	8-759-340-13	s	IC HD14013BP
IC308	8-759-045-38	s	IC MC14538BCP
R327	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R331	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R335	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R339	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R342	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R343	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R342	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R343	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R645	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

DUS-535 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
C810	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C811	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C812	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C813	1-126-096-11	s	ELECT 10uF 20% 35V
C814	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C815	1-163-019-00	s	CERAMIC, CHIP 0.0068uF 10% 50V
C816	1-124-598-11	s	ELECT 22uF 20% 25V
C817	1-124-598-11	s	ELECT 22uF 20% 25V
C818	1-124-598-11	s	ELECT 22uF 20% 25V
C819	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C820	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C821	1-124-598-11	s	ELECT 22uF 20% 25V
C822	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C823	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C824	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C830	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
CN810	1-691-271-11	s	CONNECTOR, 10P, MALE
CN811	1-691-271-11	s	CONNECTOR, 10P, MALE
D810	8-719-104-34	s	DIODE 1S2836
D811	8-719-104-34	s	DIODE 1S2836
D812	8-719-104-34	s	DIODE 1S2836
D813	8-719-104-34	s	DIODE 1S2836
D815	8-719-106-16	s	DIODE RD6.8M-B1
IC811	8-759-140-53	s	IC UPD4053BC
IC812	8-759-705-58	s	IC NJM4558D-D
IC813	8-759-729-03	s	IC NJM2903D
IC814	8-759-140-53	s	IC UPD4053BC
L810	1-408-422-00	s	INDUCTOR 120uH
Q810	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q811	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q812	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q813	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q814	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q815	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q816	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q817	8-729-901-05	s	TRANSISTOR DTA124EK
Q818	8-729-901-00	s	TRANSISTOR DTC124EK
R810	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R811	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R812	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R813	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R814	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R815	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R816	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R817	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R818	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R819	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R820	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R822	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R823	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R824	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R825	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R826	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R827	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R828	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R829	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R830	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R831	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R832	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R833	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R834	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R835	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R836	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R837	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R838	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R839	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R840	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R841	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R842	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R843	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R844	1-249-426-11	s	CARBON 5.6K 5% 1/4W

DUS-544 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-644-095-12	o	PRINTED CIRCUIT BOARD, DUS-544
C1	1-126-768-11	s	ELECT 2200uF 20% 16V
CN1	1-506-481-11	s	CONNECTOR, 2P, MALE

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

DUS-592 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8276-478-A	o	MOUNTED CIRCUIT BOARD, DUS-592
C1	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C2	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C3	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
L1	1-410-384-31	s	INDUCTOR, CHIP 18uH
L2	1-410-390-11	s	INDUCTOR, CHIP 56uH
Q1	8-729-216-22	s	TRANSISTOR 2SA1162
Q2	8-729-901-01	s	TRANSISTOR DTC144EK
Q3	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q4	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q5	8-729-901-01	s	TRANSISTOR DTC144EK
R1	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R2	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R3	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R4	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R5	1-216-295-00	s	METAL, CHIP 0-OHM
R6	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R7	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R8	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R9	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R10	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R11	1-216-295-00	s	METAL, CHIP 0-OHM
R12	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

HN-160 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-251-12	o	PRINTED CIRCUIT BOARD, HN-160
CN651	1-506-481-11	s	CONNECTOR, 2P, MALE
CN652	1-506-481-11	s	CONNECTOR, 2P, MALE
CN653	1-506-481-11	s	CONNECTOR, 2P, MALE
CN654	1-506-481-11	s	CONNECTOR, 2P, MALE
CN655	1-506-484-11	s	CONNECTOR, 5P, MALE
CN656	1-506-482-11	s	CONNECTOR, 3P, MALE
CN657	1-506-484-11	s	CONNECTOR, 5P, MALE
CN658	1-506-487-11	s	CONNECTOR, 8P, MALE
CN659	1-506-481-11	s	CONNECTOR, 2P, MALE

HN-182 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-644-091-11	o	PRINTED CIRCUIT BOARD, HN-182
CN720	1-562-887-11	s	CONNECTOR, FPC 20P
CN730	1-506-491-11	s	CONNECTOR, 12P, MALE
CN731	1-506-483-21	s	CONNECTOR, 4P, MALE

HP-54 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-643-492-11	o	PRINTED CIRCUIT BOARD, HP-54
C1	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
CN6001	1-507-854-00	s	JACK, PHONE
CN6002	1-507-797-21	s	JACK, LARGE 2P
CN651W	1-506-468-11	s	CONNECTOR, 3P, MALE
CN652W	1-506-472-11	s	CONNECTOR, 7P, MALE
R1	1-249-397-11	s	CARBON 22 5% 1/4W
R2	1-249-397-11	s	CARBON 22 5% 1/4W
RV1	1-237-703-11	s	RES, VAR CARBON 2K/2K

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10231
*3 SERIAL NO.10001-10430

KY-229A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-529-A	o	MOUNTED CIRCUIT BOARD, KY-229A
C101	1-126-786-11	s	ELECT 47uF 20% 16V
C102	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C103	1-126-786-11	s	ELECT 47uF 20% 16V
C104	1-126-786-11	s	ELECT 47uF 20% 16V
C105	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C106	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C107	1-163-011-11	s	CERAMIC, CHIP 0.0015uF 10% 50V
C108	1-126-941-11	s	ELECT 470uF 20% 25V
C108 *1	1-126-935-11	s	ELECT 470uF 20% 16V
C109	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C110	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C111	1-126-923-11	s	ELECT 220uF 20% 10V
C112	1-126-923-11	s	ELECT 220uF 20% 10V
C113	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C114	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C115	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C116	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C117	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C118	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C119	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
CN151	1-564-019-31	o	CONNECTOR, 9P, MALE
CN152	1-506-468-11	s	CONNECTOR, 3P, MALE
CN153	1-506-486-11	s	CONNECTOR, 7P, MALE
CN154	1-506-471-11	s	CONNECTOR, 6P, MALE
CN155	1-506-492-11	o	CONNECTOR, 13P, MALE
CN156	1-506-487-11	s	CONNECTOR, 8P, MALE
CN157	1-506-485-11	s	CONNECTOR, 6P, MALE
CN158	1-506-482-11	s	CONNECTOR, 3P, MALE
D101	8-719-400-18	s	DIODE MA152WK
D102	8-719-400-18	s	DIODE MA152WK
D103	8-719-400-18	s	DIODE MA152WK
D104	8-719-400-18	s	DIODE MA152WK
D108	8-719-400-18	s	DIODE MA152WK
D109	8-719-400-18	s	DIODE MA152WK
D111	8-719-400-18	s	DIODE MA152WK
D112	8-719-400-18	s	DIODE MA152WK
D116	8-719-400-18	s	DIODE MA152WK
D117	8-719-400-18	s	DIODE MA152WK
D119	8-719-400-18	s	DIODE MA152WK
D120	8-719-400-18	s	DIODE MA152WK
D123	8-719-400-18	s	DIODE MA152WK
D125	8-719-400-18	s	DIODE MA152WK
D128	8-719-400-18	s	DIODE MA152WK
D133	8-719-800-76	s	DIODE 1SS226
D134	8-719-939-39	s	LED GL5HD8, RED
D135	8-719-939-39	s	LED GL5HD8, RED
D136	8-719-939-39	s	LED GL5HD8, RED
D137	8-719-939-39	s	LED GL5HD8, RED
D138	8-719-939-39	s	LED GL5HD8, RED
D139	8-719-802-11	s	LED TLUG154, GRN
D140	8-719-939-39	s	LED GL5HD8, RED
D141	8-719-400-18	s	DIODE MA152WK
IC101	8-759-085-45	s	IC MC68HC05C4BSC412077B
IC101 *1	8-759-070-50	s	IC 68HC05C4B-SC403089B
IC102	8-759-207-07	s	IC TD62381P
IC103	8-759-000-43	s	IC MC14042BCP

(KY-229A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L101	1-421-459-00	s	COIL, CHOKE
Q101	8-729-100-66	s	TRANSISTOR 2SC1623
Q102	8-729-904-54	s	TRANSISTOR DTB143EK
Q103	8-729-904-54	s	TRANSISTOR DTB143EK
Q104	8-729-904-54	s	TRANSISTOR DTB143EK
Q105	8-729-904-54	s	TRANSISTOR DTB143EK
Q106	8-729-904-54	s	TRANSISTOR DTB143EK
Q107	8-729-904-54	s	TRANSISTOR DTB143EK
Q108	8-729-904-54	s	TRANSISTOR DTB143EK
Q109	8-729-904-54	s	TRANSISTOR DTB143EK
Q110	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q111	8-729-904-54	s	TRANSISTOR DTB143EK
Q112	8-729-904-54	s	TRANSISTOR DTB143EK
Q113	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q114	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q115	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q116	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q117	8-729-901-01	s	TRANSISTOR DTC144EK
Q118	8-729-901-06	s	TRANSISTOR DTA144EK
Q119	8-729-901-01	s	TRANSISTOR DTC144EK
Q120	8-729-901-06	s	TRANSISTOR DTA144EK
Q121	8-729-901-01	s	TRANSISTOR DTC144EK
Q122	8-729-901-06	s	TRANSISTOR DTA144EK
Q123	8-729-901-01	s	TRANSISTOR DTC144EK
Q124	8-729-901-06	s	TRANSISTOR DTA144EK
Q125	8-729-921-73	s	TRANSISTOR 2SD1781K-QR
Q126	8-729-921-73	s	TRANSISTOR 2SD1781K-QR
R101	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R102	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R103	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R106	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R107	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R108	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R109	1-260-087-81	s	CARBON 100 5% 1/2W
R110	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R111	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R112	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10
R113	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R114	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R115	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R116	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R117	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R118	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R119	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R120	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R121	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10
R122	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R123	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R124	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R125	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R126	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R127	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R128	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R129	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R130	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(KY-229A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R131	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R132	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R133	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R134	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R135	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R136	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R137	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R138	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R139	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R140	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R141	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R142	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R143	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R144	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R145	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R146	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R147	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R148	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R149	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R150	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R151	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R152	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R153	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R154	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R155	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R157	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R158	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R159	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R160	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R161	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R162	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R163	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R164	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R165	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R166	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R167	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R168	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R169	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R170	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
S101	1-552-539-00	s	SWITCH, TACTILE
S102	1-570-472-11	s	SWITCH, PUSH
S103	1-570-472-11	s	SWITCH, PUSH
S104	1-516-995-00	s	SWITCH, LEVER SLIDE
S107	1-552-539-00	s	SWITCH, TACTILE
S108	1-552-539-00	s	SWITCH, TACTILE
S109	1-570-472-11	s	SWITCH, PUSH
S110	1-570-472-11	s	SWITCH, PUSH
S111	1-552-539-00	s	SWITCH, TACTILE
S112	1-552-539-00	s	SWITCH, TACTILE
S113	1-552-539-00	s	SWITCH, TACTILE
S114	1-552-539-00	s	SWITCH, TACTILE
S115	1-552-539-00	s	SWITCH, TACTILE
S117	1-552-539-00	s	SWITCH, TACTILE
X101	1-567-192-11	s	RESONATOR, CERAMIC 4.00MHz

LD-35 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
CN620	1-506-481-11	s	CONNECTOR, 2P, MALE

LE-80 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-247-11	o	PRINTED CIRCUIT BOARD, LE-80
1pc	3-167-028-02	o	HOLDER, LED
D1	8-719-985-00	s	DIODE GL451VS1

LE-86 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-250-11	o	PRINTED CIRCUIT BOARD, LE-86
D1	8-719-821-22	s	LED TLO22, ORG

MT-73 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-643-483-11	o	PRINTED CIRCUIT BOARD, MT-73
ME1001	1-520-506-11	s	METER, AUDIO LEVEL
ME1002	1-520-506-31	s	METER, AUDIO/TRACKING LEVEL
CN802	1-506-483-21	s	CONNECTOR, 4P, MALE
D1	8-719-820-27	s	LED TLY-256, YEL
D2	8-719-820-27	s	LED TLY-256, YEL
D3	8-719-820-27	s	LED TLY-256, YEL
D4	8-719-820-27	s	LED TLY-256, YEL
R1	1-249-411-11	s	CARBON 330 5% 1/4W
R2	1-249-411-11	s	CARBON 330 5% 1/4W
RV1	1-228-471-00	s	RES, ADJ, METAT 1K
RV2	1-228-471-00	s	RES, ADJ, METAT 1K

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

NR-40A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-530-A	o	MOUNTED CIRCUIT BOARD, NR-40A
1pc	3-168-157-01	o	BRACKET (R), VO BOARD
1pc	3-168-158-01	o	BRACKET (L), VO BOARD
1pc	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3X6
C101	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C102	1-126-947-11	s	ELECT 47uF 20% 35V
C103	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C104	1-126-947-11	s	ELECT 47uF 20% 35V
C106	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C107	1-163-120-00	s	CERAMIC, CHIP 130pF 5% 50V
C108	1-163-120-00	s	CERAMIC, CHIP 130pF 5% 50V
C109	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C110	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C111	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C112	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C113	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C114	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C115	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C116	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C117	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C118	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C119	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C120	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C121	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C122	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C123	1-124-925-11	s	ELECT 2.2uF 20% 100V
C124	1-164-343-11	s	CERAMIC, CHIP 0.056uF 10% 25V
C125	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C126	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C127	1-126-947-11	s	ELECT 47uF 20% 35V
C128	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C129	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C130	1-164-182-11	s	CERAMIC, CHIP 0.0033uF 10% 50V
C131	1-163-063-00	s	CERAMIC, CHIP 0.022uF 10% 50V
C132	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C133	1-163-063-00	s	CERAMIC, CHIP 0.022uF 10% 50V
C134	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C135	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C136	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C137	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C138	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C139	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C140	1-163-120-00	s	CERAMIC, CHIP 130pF 5% 50V
C142	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C143	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C144	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C145	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C150	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C201	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C202	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C203	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C204	1-123-382-00	s	ELECT 3.3uF 20% 100V
C205	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C206	1-123-382-00	s	ELECT 3.3uF 20% 100V
C207	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C208	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C209	1-123-382-00	s	ELECT 3.3uF 20% 100V
C210	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C211	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C212	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C213	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C214	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C215	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C216	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C217	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C218	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C219	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C220	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C221	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C222	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C223	1-126-947-11	s	ELECT 47uF 20% 35V
C224	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C225	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C227	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C228	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C229	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C230	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C231	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C232	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C233	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C234	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C236	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C237	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C238	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C239	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C240	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C241	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C242	1-163-091-00	s	CERAMIC, CHIP 8pF 50V
C243	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C244	1-163-217-11	s	CERAMIC, CHIP 1pF 50V
C245	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C246	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C247	1-126-947-11	s	ELECT 47uF 20% 35V
C248	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C301	1-126-947-11	s	ELECT 47uF 20% 35V
C302	1-126-947-11	s	ELECT 47uF 20% 35V
C303	1-126-947-11	s	ELECT 47uF 20% 35V
C304	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C305	1-126-933-11	s	ELECT 100uF 20% 16V
C306	1-126-933-11	s	ELECT 100uF 20% 16V
C307	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C308	1-126-933-11	s	ELECT 100uF 20% 16V
C309	1-126-947-11	s	ELECT 47uF 20% 35V
C310	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C312	1-126-947-11	s	ELECT 47uF 20% 35V
C313	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C314	1-126-935-11	s	ELECT 470uF 20% 16V
C315	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C317	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C319	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C320	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C321	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C322	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C323	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C324	1-126-947-11	s	ELECT 47uF 20% 35V
C326	1-126-947-11	s	ELECT 47uF 20% 35V
C329	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C330	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C331	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C333	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C334	1-126-157-11	s	ELECT 10uF 20% 16V
C335	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C336	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C337	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C338	1-126-947-11	s	ELECT 47uF 20% 35V
C339	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C340	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C341	1-163-134-00	s	CERAMIC, CHIP 510pF 5% 50V
C342	1-126-933-11	s	ELECT 100uF 20% 16V
C343	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C344	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C345	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C346	1-123-382-00	s	ELECT 3.3uF 20% 100V
C347	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C348	1-126-947-11	s	ELECT 47uF 20% 35V
CN101	1-506-474-11	s	CONNECTOR, 9P, MALE
CN102	1-506-477-11	s	CONNECTOR, 12P, MALE
CN103	1-506-470-11	s	CONNECTOR, 5P, MALE
CN201	1-506-473-11	s	CONNECTOR, 8P, MALE
CN213	1-506-468-11	s	CONNECTOR, 3P, MALE
CN301	1-506-469-11	s	CONNECTOR, 4P, MALE
CN302	1-506-470-11	s	CONNECTOR, 5P, MALE
D101	8-719-104-34	s	DIODE 1S2836
D102	8-719-800-76	s	DIODE 1SS226
D103	8-719-400-18	s	DIODE MA152WK
D104	8-719-400-18	s	DIODE MA152WK
D106	8-719-400-18	s	DIODE MA152WK
D107	8-719-400-18	s	DIODE MA152WK
D108	8-719-400-18	s	DIODE MA152WK
D109	8-719-400-18	s	DIODE MA152WK
D110	8-719-400-18	s	DIODE MA152WK
D111	8-719-400-18	s	DIODE MA152WK
D201	8-719-104-10	s	DIODE 1SS99
D202	8-719-104-10	s	DIODE 1SS99
D203	8-719-104-10	s	DIODE 1SS99
D204	8-719-104-10	s	DIODE 1SS99
D205	8-719-105-28	s	DIODE RD2.4M-B
D206	8-719-157-36	s	DIODE RD6.8M-B
D301	8-719-104-10	s	DIODE 1SS99
D302	8-719-104-10	s	DIODE 1SS99
D303	8-719-104-10	s	DIODE 1SS99
D304	8-719-104-10	s	DIODE 1SS99
D305	8-719-104-10	s	DIODE 1SS99
D306	8-719-104-10	s	DIODE 1SS99
D307	8-719-104-10	s	DIODE 1SS99
D308	8-719-104-10	s	DIODE 1SS99
D309	8-719-400-18	s	DIODE MA152WK
D310	8-719-106-43	s	DIODE RD9.1M-B1
D311	8-719-105-82	s	DIODE RD5.1M-B2
D312	8-719-105-57	s	DIODE RD3.9M-B1
IC101	8-759-710-07	s	IC NJM2234M
IC102	8-759-710-86	s	IC NJM2233BM
IC103	8-759-969-13	s	IC SN16913P
IC104	8-759-908-17	s	IC TL082CPS
IC105	8-759-008-82	s	IC MC14013BF
IC106	8-759-009-51	s	IC MC14538BF
IC107	8-759-710-07	s	IC NJM2234M
IC108	8-759-008-98	s	IC MC14040BF
IC109	8-759-708-05	s	IC NJM78L05A
IC110	8-759-008-79	s	IC MC14011BF
IC111	8-759-008-74	s	IC MC14001BF
IC201	8-752-333-24	s	IC CXL1506M
IC202	8-759-710-86	s	IC NJM2233BM
IC203	8-759-925-60	s	IC BA401
IC301	8-759-710-07	s	IC NJM2234M
IC302	8-759-925-60	s	IC BA401
IC304	8-759-710-07	s	IC NJM2234M
IC305	8-759-925-60	s	IC BA401
IC306	8-759-201-47	s	IC TA7357AP
IC307	8-759-711-41	s	IC NJM2220S
L101	1-410-473-11	s	INDUCTOR 18uH
L102	1-410-473-11	s	INDUCTOR 18uH
L103	1-410-473-11	s	INDUCTOR 18uH
L104	1-410-482-31	s	INDUCTOR 100uH
L105	1-410-473-11	s	INDUCTOR 18uH
L201	1-410-470-11	s	INDUCTOR 10uH
L202	1-410-478-11	s	INDUCTOR 47uH
L203	1-408-414-00	s	INDUCTOR 27uH
L204	1-408-413-00	s	INDUCTOR 22uH
L205	1-410-482-31	s	INDUCTOR 100uH
L206	1-408-416-00	s	INDUCTOR 39uH
L207	1-408-397-00	s	INDUCTOR 1uH
L209	1-410-470-11	s	INDUCTOR 10uH
L301	1-410-470-11	s	INDUCTOR 10uH
L302	1-410-482-31	s	INDUCTOR 100uH
L303	1-410-470-11	s	INDUCTOR 10uH
Q101	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q102	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q103	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q104	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q105	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q106	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q107	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q108	8-729-901-01	s	TRANSISTOR DTC144EK
Q109	8-729-903-10	s	TRANSISTOR FMW1
Q110	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q111	8-729-216-22	s	TRANSISTOR 2SA1162
Q112	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q114	8-729-216-22	s	TRANSISTOR 2SA1162
Q115	8-729-216-22	s	TRANSISTOR 2SA1162
Q117	8-729-901-01	s	TRANSISTOR DTC144EK
Q118	8-729-216-22	s	TRANSISTOR 2SA1162
Q123	8-729-901-01	s	TRANSISTOR DTC144EK
Q124	8-729-901-04	s	TRANSISTOR DTA114EK
Q131	8-729-901-01	s	TRANSISTOR DTC144EK
Q132	8-729-901-01	s	TRANSISTOR DTC144EK
Q133	8-729-901-01	s	TRANSISTOR DTC144EK
Q134	8-729-901-01	s	TRANSISTOR DTC144EK
Q135	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q136	8-729-901-01	s	TRANSISTOR DTC144EK
Q137	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q138	8-729-901-01	s	TRANSISTOR DTC144EK
Q139	8-729-230-49	s	TRANSISTOR 2SC2712YG

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q140	8-729-901-01	s	TRANSISTOR DTC144EK
Q141	8-729-901-01	s	TRANSISTOR DTC144EK
Q142	8-729-901-01	s	TRANSISTOR DTC144EK
Q143	8-729-901-01	s	TRANSISTOR DTC144EK
Q143 *1			NOT IN USE.
Q144	8-729-901-01	s	TRANSISTOR DTC144EK
Q201	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q202	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q203	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q204	8-729-901-01	s	TRANSISTOR DTC144EK
Q206	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q207	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q208	8-729-216-22	s	TRANSISTOR 2SA1162
Q209	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q210	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q211	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q215	8-729-903-97	s	TRANSISTOR FMS1FE
Q216	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q217	8-729-216-22	s	TRANSISTOR 2SA1162
Q218	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q219	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q220	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q221	8-729-901-01	s	TRANSISTOR DTC144EK
Q222	8-729-202-38	s	TRANSISTOR 2SC3326N
Q223	8-729-202-38	s	TRANSISTOR 2SC3326N
Q224	8-729-202-38	s	TRANSISTOR 2SC3326N
Q225	8-729-216-22	s	TRANSISTOR 2SA1162
Q226	8-729-216-22	s	TRANSISTOR 2SA1162
Q301	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q302	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q303	8-729-903-97	s	TRANSISTOR FMS1FE
Q304	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q305	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q306	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q307	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q308	8-729-903-97	s	TRANSISTOR FMS1FE
Q309	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q310	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q311	8-729-901-04	s	TRANSISTOR DTA114EK
Q312	8-729-901-01	s	TRANSISTOR DTC144EK
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q315	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q318	8-729-901-01	s	TRANSISTOR DTC144EK
Q319	8-729-901-01	s	TRANSISTOR DTC144EK
Q320	8-729-216-22	s	TRANSISTOR 2SA1162
Q321	8-729-216-22	s	TRANSISTOR 2SA1162
R103	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R104	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R105	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R107	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R108	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R109	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R110	1-216-632-11	s	METAL, CHIP 160 0.5% 1/10W
R111	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R113	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R114	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R115	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R116	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R117	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R118	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R119	1-216-110-00	s	METAL, CHIP 360K 0.50% 1/10W
R120	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R121	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R122	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R123	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R124	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R125	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R126	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R127	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R128	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R129	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R130	1-216-695-11	s	METAL, CHIP 68K 0.5% 1/10W
R131	1-216-696-11	s	METAL, CHIP 75K 0.5% 1/10W
R132	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R133	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R134	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R135	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R136	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R137	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R138	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R139	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R140	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R142	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R144	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R145	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R146	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R149	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R150	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R152	1-216-295-00	s	METAL, CHIP 0-OHM
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R158	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R159	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R160	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R161	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R162	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R163	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R178	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R183	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R184	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R185	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R186	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R187	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R188	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R189	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R190	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R191	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R192	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R193	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R194	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R195	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R195 *1	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R196	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R197	1-249-429-11	s	CARBON 10K 5% 1/4W
R197 *1			NOT IN USE.
R201	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R202	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R203	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R204	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R205	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R206	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R207	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R208	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R209	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R211	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R212	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R214	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R215	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R216	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R217	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R218	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R219	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R220	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R221	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R222	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R223	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R224	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R225	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R226	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R227	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R228	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R234	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R235	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R236	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R237	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R238	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R239	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R240	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R241	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R242	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R243	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R244	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R245	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R246	1-216-642-11	s	METAL, CHIP 430 0.5% 1/10W
R247	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R248	1-216-007-00	s	METAL, CHIP 18 5% 1/10W
R249	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R250	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R251	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R253	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R254	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R255	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R256	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R257	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R258	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R259	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R261	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R262	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R263	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R264	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R265	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R266	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R267	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R268	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R269	1-216-041-00	s	METAL, CHIP 470 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R270	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R271	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R301	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R302	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R303	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R304	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R305	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R306	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R307	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R308	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R309	1-216-015-00	s	METAL 39 5% 1/10W
R310	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R311	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R312	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R313	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R314	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R315	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R316	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R317	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R318	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R319	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R322	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R323	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R324	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R326	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R327	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R328	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R330	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R331	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R332	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R333	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R334	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R335	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R336	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R337	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R339	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R340	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R341	1-216-017-00	s	METAL, CHIP 47 5% 1/10W
R343	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R344	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R346	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R347	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R348	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R349	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R350	1-216-618-11	s	METAL, CHIP 43 0.5% 1/10W
R351	1-216-618-11	s	METAL, CHIP 43 0.5% 1/10W
R352	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R353	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R354	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R355	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R356	1-216-100-00	s	METAL 130K 0.50% 1/10W
R357	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R358	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R359	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R360	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R361	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R363	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R365	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R367	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R368	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R369	1-216-688-11	s	METAL, CHIP 36K 0.5% 1/10W
R370	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R371	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R372	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R373	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R782	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
RV101	1-238-013-11	s	RES, ADJ CARBON 2.2K
RV102	1-238-013-11	s	RES, ADJ CARBON 2.2K
RV103	1-238-015-11	s	RES, ADJ CARBON 4.7K
RV202	1-238-011-11	s	RES, ADJ CARBON 470
RV203	1-238-011-11	s	RES, ADJ CARBON 470
RV204	1-238-011-11	s	RES, ADJ CARBON 470
S1	1-553-510-00	s	SWITCH, SLIDE
TH201	1-808-269-11	s	THERMISTOR
TH202	1-808-269-11	s	THERMISTOR

RP-62A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-316-A	o	MOUNTED CIRCUIT BOARD, RP-62A
1pc	3-173-468-01	o	SHEET, INSULATING, RP
1pc	3-173-491-02	o	SHIELD (A), RP
1pc	3-173-492-01	o	SHIELD (B), RP
C1	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C2	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C3	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C4	1-124-589-11	s	ELECT 47uF 20% 16V
C5	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C101	1-126-163-11	s	ELECT 4.7uF 20% 50V
C102	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C103	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C104	1-124-589-11	s	ELECT 47uF 20% 16V
C105	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C106	1-124-463-00	s	ELECT 0.1uF 20% 50V
C107	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C108	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C109	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C111	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C112	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C113	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C201	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C203	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C204	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C205	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C207	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C209	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C210	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C211	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C213	1-164-346-11	s	CERAMIC, CHIP 1uF 16V
C214	1-126-153-11	s	ELECT 22uF 20% 6.3V
C216	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C217	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C218	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C219	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C220	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C221	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C222	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C223	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C224	1-126-153-11	s	ELECT 22uF 20% 6.3V
C225	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C226	1-126-153-11	s	ELECT 22uF 20% 6.3V
C230	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C231	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C232	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C233	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C234	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C236	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C237	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C238	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C239	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C240	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C241	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C242	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C243	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C244	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C245	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C246	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C247	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C248	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C249	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C250	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C251	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C252	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C253	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C254	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C255	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C256	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C257	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C258	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C259	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C260	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C261	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C262	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C263	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C264	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C265	1-124-589-11	s	ELECT 47uF 20% 16V
C266	1-163-085-00	s	CERAMIC, CHIP 2pF 50V
C267	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C270	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C272	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C273	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C274	1-162-207-31	s	CERAMIC 22pF 5% 50V
C275	1-162-207-31	s	CERAMIC 22pF 5% 50V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C303	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C304	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C305	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C306	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C307	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C308	1-102-110-00	s	CERAMIC 220pF 10% 50V
C319	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C320	1-163-143-00	s	CERAMIC, CHIP 0.0012uF 5% 50V
C323	1-124-463-00	s	ELECT 0.1uF 20% 50V
C324	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C325	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C326	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C327	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C328	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C329	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C330	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C331	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C332	1-126-160-11	s	ELECT 1uF 20% 50V
C333	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C334	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C335	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C336	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C337	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C339	1-126-157-11	s	ELECT 10uF 20% 16V
C340	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C341	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C342	1-126-163-11	s	ELECT 4.7uF 20% 50V
C350	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C351	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C353	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C354	1-126-163-11	s	ELECT 4.7uF 20% 50V
C355	1-124-589-11	s	ELECT 47uF 20% 16V
C356	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
CN801	1-563-590-11	o	CONNECTOR, FPC 13P, FEMALE
CN802	1-506-486-11	s	CONNECTOR, 7P, MALE
CN803	1-506-485-11	s	CONNECTOR, 6P, MALE
CN804	1-564-031-00	o	CONNECTOR, 6P, MALE
CN805	1-506-485-11	s	CONNECTOR, 6P, MALE
CN806	1-506-484-11	s	CONNECTOR, 5P, MALE
CN807	1-506-485-11	s	CONNECTOR, 6P, MALE
CN808	1-506-482-11	s	CONNECTOR, 3P, MALE
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D203	8-719-400-18	s	DIODE MA152WK
D301	8-719-400-18	s	DIODE MA152WK
DL201	1-415-858-11	s	DELAY LINE 35ns
DL202	1-415-858-11	s	DELAY LINE 35ns
IC101	8-759-420-60	s	IC AN6392L
IC201	8-759-320-52	s	IC HA118019NT
IC202	8-759-012-00	s	IC MC10H116M
IC301	8-759-320-55	s	IC HA12115MP
IC302	8-759-998-32	s	IC CXD2107M
L101	1-408-968-21	s	INDUCTOR 6.8uH
L102	1-410-149-11	s	INDUCTOR 39uH
L103	1-407-169-99	s	INDUCTOR 100uH
L200	1-407-169-99	s	INDUCTOR 100uH
L201	1-408-948-00	s	INDUCTOR 220uH
L202	1-408-976-21	s	INDUCTOR 33uH
L203	1-408-971-21	s	INDUCTOR 12uH
L204	1-408-977-21	s	INDUCTOR 39uH
L205	1-408-948-00	s	INDUCTOR 220uH
L206	1-408-970-21	s	INDUCTOR 10uH
L207	1-408-978-21	s	INDUCTOR 47uH
L208	1-408-973-21	s	INDUCTOR 18uH
L209	1-408-978-21	s	INDUCTOR 47uH
L210	1-407-169-99	s	INDUCTOR 100uH
L211	1-407-169-99	s	INDUCTOR 100uH
L212	1-408-974-21	s	INDUCTOR 22uH
L213	1-407-169-99	s	INDUCTOR 100uH
L214	1-408-972-21	s	INDUCTOR 15uH
L215	1-408-970-21	s	INDUCTOR 10uH
L301	1-408-989-21	s	INDUCTOR 470uH
L302	1-410-140-11	s	INDUCTOR 6.8uH
L303	1-407-169-99	s	INDUCTOR 100uH
L304	1-407-169-99	s	INDUCTOR 100uH
L305	1-407-169-99	s	INDUCTOR 100uH
L306	1-408-970-21	s	INDUCTOR 10uH
Q101	8-729-202-38	s	TRANSISTOR 2SC3326N
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q104	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q105	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q201	8-729-216-22	s	TRANSISTOR 2SA1162
Q202	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-901-01	s	TRANSISTOR DTC144EK
Q204	8-729-901-01	s	TRANSISTOR DTC144EK
Q210	8-729-230-49	s	TRANSISTOR 2SC2712YG

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Ref. No. or Q'ty	Part No.	SP	Description
Q211	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q212	8-729-216-22	s	TRANSISTOR 2SA1162
Q213	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q214	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q215	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q216	8-729-216-22	s	TRANSISTOR 2SA1162
Q217	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q218	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q219	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q220	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q221	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q222	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q223	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q302	8-729-216-22	s	TRANSISTOR 2SA1162
Q303	8-729-216-22	s	TRANSISTOR 2SA1162
Q304	8-729-216-22	s	TRANSISTOR 2SA1162
Q310	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q311	8-729-216-22	s	TRANSISTOR 2SA1162
Q312	8-729-901-01	s	TRANSISTOR DTC144EK
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-901-06	s	TRANSISTOR DTA144EK
Q315	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R102	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R103	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R106	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R107	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R108	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R109	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R110	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R111	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R112	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R113	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R114	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R115	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R116	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R117	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R118	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R120	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R121	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R201	1-216-632-11	s	METAL, CHIP 160 0.5% 1/10W
R202	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R203	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R204	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R205	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R206	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R207	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R208	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R209	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R210	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R211	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R212	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R213	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R214	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R215	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R216	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R217	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R218	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R219	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R220	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R221	1-216-295-00	s	METAL, CHIP 0-OHM
R222	1-216-295-00	s	METAL, CHIP 0-OHM
R230	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R231	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R232	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R233	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R234	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R236	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R237	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R238	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R239	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R240	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R241	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R242	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R243	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R244	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R245	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R246	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R247	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R248	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R249	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R250	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R251	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R253	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R254	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R255	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R256	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R257	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R258	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R259	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R260	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R261	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R264	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R265	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R266	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R267	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R268	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R269	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R272	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R273	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R274	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R275	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R276	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R278	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R279	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R280	1-216-636-11	s	METAL, CHIP 240 0.5% 1/10W
R281	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

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Ref. No. or Q'ty	Part No.	SP	Description
R282	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R283	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R284	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R285	1-216-636-11	s	METAL, CHIP 240 0.5% 1/10W
R286	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R287	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R288	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R289	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R290	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R291	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R292	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R293	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R301	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R302	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R303	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R304	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R305	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R306	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R308	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R309	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R320	1-216-019-00	s	METAL, CHIP 56 5% 1/10W
R322	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R323	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R324	1-216-304-11	s	METAL 3.3 5% 1/10W
R325	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R327	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R328	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R329	1-216-304-11	s	METAL 3.3 5% 1/10W
R330	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R331	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R340	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R341	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R342	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R343	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R344	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R346	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R349	1-216-295-00	s	METAL, CHIP 0-OHM
RV201	1-241-136-11	s	RES, ADJ CARBON 10K

SE-151 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-245-13	o	PRINTED CIRCUIT BOARD, SE-151
1pc	3-167-013-02	o	HOLDER, ST SENSOR
CN610	1-506-467-11	s	CONNECTOR, 2P, MALE
Q1	8-729-926-31	s	PHOTO TRANSISTOR PT483F1S

SE-152 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-246-12	o	PRINTED CIRCUIT BOARD, SE-152
1pc	3-167-013-02	o	HOLDER, ST SENSOR
Q1	8-729-926-31	s	PHOTO TRANSISTOR PT483F1S

SE-159 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-249-11	o	PRINTED CIRCUIT BOARD, SE-159
1pc	3-167-036-01	o	HOLDER, DETECTOR
PC1	1-806-232-21	s	DETECTOR, CDS MB-1102/S.N

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

SS-49C BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-527-A	o	MOUNTED CIRCUIT BOARD, SS-49C
3pcs	3-682-057-11	s	SPACER (SMALL)
2pcs	4-924-098-31	o	HOLDER, PC BOARD
C101	1-126-933-11	s	ELECT 100uF 20% 16V
C101 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C102	1-126-935-11	s	ELECT 470uF 20% 16V
C102 *2	1-126-103-11	s	ELECT 470uF 20% 16V
C103	1-125-498-11	s	DOUBLE LAYERS 1.0 FARAD 5.5V
C104	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C105	1-124-234-00	s	ELECT 22uF 20% 16V
C106	1-126-933-11	s	ELECT 100uF 20% 16V
C106 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C107	1-126-157-11	s	ELECT 10uF 20% 16V
C108	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C109	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C110	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C111	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C113	1-124-589-11	s	ELECT 47uF 20% 16V
C115	1-124-589-11	s	ELECT 47uF 20% 16V
C118	1-124-234-00	s	ELECT 22uF 20% 16V
C119	1-124-257-00	s	ELECT 2.2uF 20% 50V
C120	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C121	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C122	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C123	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C124	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C125	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C129	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C130	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C139	1-124-589-11	s	ELECT 47uF 20% 16V
C140	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C141	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C142	1-124-589-11	s	ELECT 47uF 20% 16V
C143	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C144	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C146	1-124-589-11	s	ELECT 47uF 20% 16V
C147	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C148	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C149	1-126-157-11	s	ELECT 10uF 20% 16V
C150	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C154	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C155	1-126-162-11	s	ELECT 3.3uF 20% 50V
C156	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C157	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C158	1-124-234-00	s	ELECT 22uF 20% 16V
C159	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C160	1-124-589-11	s	ELECT 47uF 20% 16V
C164	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C165	1-126-162-11	s	ELECT 3.3uF 20% 50V
C166	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C167	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C168	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C169	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C170	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C171	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C173	1-124-234-00	s	ELECT 22uF 20% 16V
C174	1-124-465-00	s	ELECT 0.47uF 20% 50V
C175	1-124-589-11	s	ELECT 47uF 20% 16V

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C176	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C177	1-124-234-00	s	ELECT 22uF 20% 16V
C178	1-124-234-00	s	ELECT 22uF 20% 16V
C179	1-124-465-00	s	ELECT 0.47uF 20% 50V
C180	1-126-163-11	s	ELECT 4.7uF 20% 50V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-126-162-11	s	ELECT 3.3uF 20% 50V
C303	1-126-162-11	s	ELECT 3.3uF 20% 50V
C304	1-126-157-11	s	ELECT 10uF 20% 16V
C305	1-126-157-11	s	ELECT 10uF 20% 16V
C306	1-126-162-11	s	ELECT 3.3uF 20% 50V
C307	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C308	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C310	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C311	1-124-242-00	s	ELECT 33uF 20% 25V
C312	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C313	1-124-242-00	s	ELECT 33uF 20% 25V
C314	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C315	1-124-242-00	s	ELECT 33uF 20% 25V
C316	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C317	1-124-242-00	s	ELECT 33uF 20% 25V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C322	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C323	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C324	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C325	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C326	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C327	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C328	1-126-933-11	s	ELECT 100uF 20% 16V
C328 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C329	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C330	1-126-934-11	s	ELECT 220uF 20% 16V
C330 *2	1-124-120-11	s	ELECT 220uF 20% 25V
C331	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C332	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C333	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C334	1-126-933-11	s	ELECT 100uF 20% 16V
C334 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C335	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C336	1-126-934-11	s	ELECT 220uF 20% 16V
C336 *2	1-124-120-11	s	ELECT 220uF 20% 25V
C337	1-126-768-11	s	ELECT 2200uF 20% 16V
C338	1-124-589-11	s	ELECT 47uF 20% 16V
C339	1-124-465-00	s	ELECT 0.47uF 20% 50V
C340	1-124-465-00	s	ELECT 0.47uF 20% 50V
C341	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C342	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C343	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C344	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C345	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C346	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C347	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C348	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C349	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C351	1-124-465-00	s	ELECT 0.47uF 20% 50V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C353	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C354	1-126-160-11	s	ELECT 1uF 20% 50V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C363	1-126-933-11	s	ELECT 100uF 20% 16V
C363 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C364	1-126-933-11	s	ELECT 100uF 20% 16V
C364 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C365	1-126-933-11	s	ELECT 100uF 20% 16V
C365 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C366	1-126-933-11	s	ELECT 100uF 20% 16V
C366 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C367	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C515	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C516	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C518	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C519	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C520	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C521	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C522	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C523	1-124-589-11	s	ELECT 47uF 20% 16V
C524	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C525	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C526	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C527	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C528	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C529	1-126-933-11	s	ELECT 100uF 20% 16V
C529 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C530	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C536	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C539	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C540	1-124-589-11	s	ELECT 47uF 20% 16V
C545	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C546	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C547	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C548	1-126-516-11	s	ELECT 120uF 20% 16V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C603	1-126-160-11	s	ELECT 1uF 20% 50V
C604	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C605	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C606	1-126-933-11	s	ELECT 100uF 20% 16V
C606 *2	1-124-478-11	s	ELECT 100uF 20% 25V
C607	1-126-163-11	s	ELECT 4.7uF 20% 50V
C670	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
CN2	1-566-967-11	s	CONNECTOR, 6P, MALE
CN3	1-506-548-11	o	CONNECTOR, 7P, MALE
CN100	1-560-899-00	o	CONNECTOR, 11P, MALE
CN101	1-563-461-11	o	CONNECTOR, FPC 28P
CN102	1-506-473-11	o	CONNECTOR, 8P, MALE
CN103	1-506-470-11	s	CONNECTOR, 5P, MALE
CN107	1-506-468-11	s	CONNECTOR, 3P, MALE
CN108	1-506-481-11	s	CONNECTOR, 2P, MALE
CN110	1-506-477-11	s	CONNECTOR, 12P, MALE
CN111	1-506-474-11	s	CONNECTOR, 9P, MALE
CN112	1-506-468-11	s	CONNECTOR, 3P, MALE
CN114	1-506-476-11	s	CONNECTOR, 11P, MALE
CN116	1-506-478-11	s	CONNECTOR, 13P, MALE
CN117	1-506-471-11	s	CONNECTOR, 6P, MALE
CN118	1-506-468-11	s	CONNECTOR, 3P, MALE

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
CN123	1-506-474-11	s	CONNECTOR, 9P, MALE
CN124	1-506-474-11	s	CONNECTOR, 9P, MALE
CN130	1-506-471-11	s	CONNECTOR, 6P, MALE
CN131	1-506-475-11	s	CONNECTOR, 10P, MALE
CN132	1-506-471-11	s	CONNECTOR, 6P, MALE
CN133	1-506-468-11	s	CONNECTOR, 3P, MALE
CN134	1-562-883-11	o	CONNECTOR, FPC 20P, FEMALE
CN140	1-506-472-11	s	CONNECTOR, 7P, MALE
CN142	1-506-478-11	s	CONNECTOR, 13P, MALE
D101	8-719-911-19	s	DIODE 1SS119
D102	8-719-104-34	s	DIODE 1S2836
D104	8-719-200-02	s	DIODE 10E2
D105	8-719-200-02	s	DIODE 10E2
D108	8-719-938-75	s	DIODE SB05-05CP
D112	8-719-109-68	s	DIODE RD3.6ES-B1
D113	8-719-104-34	s	DIODE 1S2836
D116	8-719-109-84	s	DIODE RD5.1ES-B1
D117	8-719-104-34	s	DIODE 1S2836
D118	8-719-104-34	s	DIODE 1S2836
D119	8-719-911-19	s	DIODE 1SS119
D120	8-719-911-19	s	DIODE 1SS119
D301	8-719-800-76	s	DIODE 1SS226
D302	8-719-911-19	s	DIODE 1SS119
D303	8-719-106-16	s	DIODE RD6.8M-B1
D308	8-719-400-18	s	DIODE MA152WK
D310	8-719-106-43	s	DIODE RD9.1M-B1
D311	8-719-982-04	s	DIODE ERB81-004
D312	8-719-982-04	s	DIODE ERB81-004
D313	8-719-200-02	s	DIODE 10E2
D314	8-719-200-02	s	DIODE 10E2
D315	8-719-400-18	s	DIODE MA152WK
D316	8-719-106-16	s	DIODE RD6.8M-B1
D317	8-719-160-68	s	DIODE RD18F-B2
D318	8-719-160-68	s	DIODE RD18F-B2
D319	8-719-400-18	s	DIODE MA152WK
D320	8-719-911-19	s	DIODE 1SS119
D321	8-719-800-76	s	DIODE 1SS226
D326	8-719-110-16	s	DIODE RD10ES-B1
D327	8-719-200-02	s	DIODE 10E2
D328	8-719-200-02	s	DIODE 10E2
D329	8-719-200-02	s	DIODE 10E2
D505	8-719-104-34	s	DIODE 1S2836
D506	8-719-104-34	s	DIODE 1S2836
D508	8-719-104-34	s	DIODE 1S2836
D509	8-719-104-34	s	DIODE 1S2836
IC101	8-752-840-68	s	IC CXP80P624-437Q
IC102	8-759-720-81	s	IC M6M80011AP
IC103	8-759-981-96	s	IC RC4560D
IC104	8-759-512-71	s	IC S-8054HNM
IC106	8-759-981-96	s	IC RC4560D
IC107	8-759-729-03	s	IC NJM2903D
IC108	8-759-135-80	s	IC UPC358C
IC109	8-759-983-45	s	IC BA6238A
IC111	8-759-140-53	s	IC UPD4053BC
IC112	8-759-711-41	s	IC NJM2220S
IC113	8-759-711-41	s	IC NJM2220S
IC114	8-759-917-43	s	IC SN74HC138AN
IC115	8-759-202-61	s	IC MSM4094RS

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC116	8-759-512-71	s	IC S-8054HNM
IC117	8-743-915-10	s	IC BX3915A
IC118	8-743-915-10	s	IC BX3915A
IC301	8-759-912-77	s	IC LM324N
IC302	8-759-912-77	s	IC LM324N
IC303	8-759-140-53	s	IC UPD4053BC
IC304	8-759-984-03	s	IC LM339N
IC305	8-759-729-03	s	IC NJM2903D
IC306	8-759-091-41	s	IC UPD75108CW-W27
IC309	8-759-729-03	s	IC NJM2903D
IC310	8-759-135-80	s	IC UPC358C
IC311	8-759-912-77	s	IC LM324N
IC312	8-759-135-80	s	IC UPC358C
IC314	8-759-140-53	s	IC UPD4053BC
IC315	8-759-140-53	s	IC UPD4053BC
IC503	8-759-708-05	s	IC NJM78L05A
IC504	8-759-916-20	s	IC SN74HC14AN
IC505	8-759-981-96	s	IC RC4560D
IC506	8-759-040-70	s	IC MC14070BCP
IC508	8-759-340-13	s	IC HD14013BP
IC509	8-759-981-96	s	IC RC4560D
IC510	8-759-140-53	s	IC UPD4053BC
IC512	8-759-140-53	s	IC UPD4053BC
IC513	8-759-729-03	s	IC NJM2903D
IC514	8-759-981-96	s	IC RC4560D
IC601	8-759-729-03	s	IC NJM2903D
L101	1-410-482-31	s	INDUCTOR 100uH
L102	1-410-675-31	s	INDUCTOR 120uH
L103	1-410-675-31	s	INDUCTOR 120uH
L301	1-408-519-00	s	COIL, CHOKE 420uH
L302	1-408-519-00	s	COIL, CHOKE 420uH
PS101	⚠1-532-685-00	s	LINK, IC 0.8A
PS105	⚠1-532-637-00	s	LINK, IC 1.0A
PS301	⚠1-532-685-00	s	LINK, IC 0.8A
Q101	8-729-924-90	s	TRANSISTOR 2SB1370-EF
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-06	s	TRANSISTOR DTA144EK
Q104	8-729-216-22	s	TRANSISTOR 2SA1162
Q107	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q108	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q109	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q110	8-729-216-22	s	TRANSISTOR 2SA1162
Q114	8-729-216-22	s	TRANSISTOR 2SA1162
Q115	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q116	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q117	8-729-901-00	s	TRANSISTOR DTC124EK
Q118	8-729-901-00	s	TRANSISTOR DTC124EK
Q119	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q120	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q121	8-729-901-01	s	TRANSISTOR DTC144EK
Q122	8-729-901-01	s	TRANSISTOR DTC144EK
Q128	8-729-216-22	s	TRANSISTOR 2SA1162
Q129	8-729-216-22	s	TRANSISTOR 2SA1162
Q130	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q131	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q134	8-729-901-01	s	TRANSISTOR DTC144EK
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q302	8-729-901-01	s	TRANSISTOR DTC144EK

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q304	8-729-216-22	s	TRANSISTOR 2SA1162
Q305	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q306	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q307	8-729-216-22	s	TRANSISTOR 2SA1162
Q308	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q309	8-729-216-22	s	TRANSISTOR 2SA1162
Q310	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q311	8-729-216-22	s	TRANSISTOR 2SA1162
Q312	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q313	8-729-216-22	s	TRANSISTOR 2SA1162
Q314	8-729-320-60	s	TRANSISTOR 2SD788-34
Q315	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q316	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q317	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q318	8-729-216-22	s	TRANSISTOR 2SA1162
Q319	8-729-320-60	s	TRANSISTOR 2SD788-34
Q320	8-729-901-01	s	TRANSISTOR DTC144EK
Q321	8-729-901-01	s	TRANSISTOR DTC144EK
Q322	8-729-901-01	s	TRANSISTOR DTC144EK
Q323	8-729-202-38	s	TRANSISTOR 2SC3326N
Q331	8-729-216-22	s	TRANSISTOR 2SA1162
Q332	8-729-901-01	s	TRANSISTOR DTC144EK
Q333	8-729-901-01	s	TRANSISTOR DTC144EK
Q334	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q335	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q336	8-729-901-01	s	TRANSISTOR DTC144EK
Q337	8-729-216-22	s	TRANSISTOR 2SA1162
Q338	8-729-320-60	s	TRANSISTOR 2SD788-34
Q340	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q341	8-729-216-22	s	TRANSISTOR 2SA1162
Q342	8-729-320-60	s	TRANSISTOR 2SD788-34
Q346	8-729-889-40	s	TRANSISTOR 2SD894
Q347	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q348	8-729-811-11	s	TRANSISTOR 2SD1111
Q349	8-729-901-06	s	TRANSISTOR DTA144EK
Q350	8-729-901-01	s	TRANSISTOR DTC144EK
Q351	8-729-901-01	s	TRANSISTOR DTC144EK
Q352	8-729-900-52	s	TRANSISTOR DTC114YK
Q506	8-729-105-73	s	TRANSISTOR 2SK523-L2
Q507	8-729-901-01	s	TRANSISTOR DTC144EK
Q510	8-729-901-01	s	TRANSISTOR DTC144EK
Q516	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R102	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R103	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R104	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R105	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R106	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R107	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R108	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R109	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R110	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R111	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R112	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R114	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R115	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R116	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R119	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R120	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R121	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R123	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R124	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R125	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R126	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R127	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R128	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R129	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R130	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R131	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R132	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R133	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R134	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R135	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R136	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R137	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R138	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R139	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R140	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R141	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R142	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R143	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R144	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R145	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R146	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R147	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R148	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R149	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R150	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R151	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R152	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R153	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R154	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R155	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R157	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R158	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R159	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R160	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R161	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R162	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R163	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R164	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R165	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R166	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R167	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R168	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R169	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R170	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R172	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R173	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R174	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R175	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R176	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R177	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R178	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R179	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R180	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R183	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R184	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R185	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R186	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R187	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R188	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R194	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R195	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R196	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R198	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R199	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R200	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R201	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R202	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R203	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R204	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R205	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R206	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R207	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R209	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R210	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R211	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R212	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R213	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R214	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R215	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R217	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R218	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R219	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R220	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R221	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R222	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R223	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R224	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R226	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R227	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R228	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R229	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R230	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R231	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R232	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R233	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R234	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R235	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R236	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R237	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R238	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R239	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R240	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R241	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R242	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R243	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R245	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R247	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R248	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R250	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R251	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R255	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R256	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R268	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R269	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R272	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R273	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R274	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R275	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R276	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R278	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R280	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R281	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R282	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R285	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R289	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R290	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R291	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R292	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R293	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R294	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R295	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R296	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R298	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R299	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R301	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R302	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R303	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R304	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R305	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R306	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R307	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R309	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R310	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R311	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R312	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R313	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R314	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R315	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R316	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R317	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R318	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R320	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R321	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R322	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R324	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R325	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R328	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R329	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R330	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R332	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R333	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R334	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R336	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R337	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R338	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R341	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R346	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R349	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R350	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R351	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R352	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R353	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R354	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R355	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R356	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R357	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R358	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R359	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R360	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R361	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R362	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R363	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R364	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R366	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R367	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R368	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R370	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R371	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R372	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R373	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R375	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R376	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R377	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R378	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R379	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R380	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R381	⚠1-216-365-00	s	METAL 0.47 5% 2W
R383	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R384	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R385	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R387	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R388	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R389	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R390	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R392	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R393	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R394	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R395	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R396	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R397	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R398	⚠1-216-365-00	s	METAL 0.47 5% 2W
R399	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R400	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R401	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R402	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R403	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R404	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R405	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R406	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R407	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R408	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R409	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R410	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R411	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R412	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R413	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R414	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R416	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R417	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R418	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R419	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R420	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R421	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R422	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R423	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R424	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R425	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R426	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R427	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R428	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R429	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R430	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R431	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R432	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R433	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R434	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R435	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R436	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R437	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R438	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R439	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R440	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R441	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R442	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R443	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R444	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R445	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R446	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R447	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R448	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R449	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R450	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R451	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R452	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R453	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R454	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R455	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R456	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R457	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R458	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R459	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R461	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R462	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R463	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R464	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R465	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R466	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R467	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R468	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R469	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R470	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R471	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R472	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R473	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R474	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R475	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R476	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R479	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R480	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R481	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R482	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R483	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R485	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R486	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R487	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R488	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R489	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R490	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R492	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R494	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R495	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R496	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R497	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R498	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R499	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R531	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R532	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R533	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R535	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R536	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R537	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R538	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R539	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R540	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R541	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R542	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R543	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R544	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R546	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R548	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R549	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R550	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R551	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R552	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R553	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R554	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R555	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R556	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R557	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R558	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R559	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R560	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R561	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R562	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R563	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R568	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R569	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R570	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R571	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R572	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R573	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R576	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R577	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R578	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R600	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R601	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R602	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R603	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R604	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R605	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R606	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R607	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R609	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R610	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R616	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R617	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R618	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R632	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R633	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R634	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R635	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R636	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R637	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R638	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R640	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R641	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R642	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R643	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R644	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R646	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R647	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R648	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R650	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R651	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R652	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
RB101	1-235-196-00	s	RESISTOR BLOCK 100KX8
RB301	1-235-195-00	s	RESISTOR BLOCK 10KX8
RV101	1-238-020-11	s	RES, ADJ CARBON 100K
RV102	1-228-462-00	s	RES, ADJ METAL 100K
RV301	1-241-630-11	s	RES, ADJ CARBON 10K
RV302	1-241-630-11	s	RES, ADJ CARBON 10K
RV303	1-238-012-11	s	RES, ADJ CARBON 1K
RV304	1-238-012-11	s	RES, ADJ CARBON 1K

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(SS-49C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
RV305	1-241-630-11	s	RES, ADJ CARBON 10K
RV500	1-238-016-11	s	RES, ADJ CARBON 10K
RV502	1-241-630-11	s	RES, ADJ CARBON 10K
RV503	1-238-016-11	s	RES, ADJ CARBON 10K
S101	1-570-623-11	s	SWITCH, DIP 8-CKT
X101	1-567-962-11	s	OSCILLATOR, CRYSTAL 8MHz
X301	1-567-192-11	s	RESONATOR, CERAMIC 4MHz

SW-513 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-368-A	o	MOUNTED CIRCUIT BOARD, SW-513
C151	1-124-234-00	s	ELECT 22uF 20% 16V
C152	1-124-234-00	s	ELECT 22uF 20% 16V
C153	1-124-234-00	s	ELECT 22uF 20% 16V
C154	1-124-234-00	s	ELECT 22uF 20% 16V
C155	1-126-157-11	s	ELECT 10uF 20% 16V
C157	1-124-455-00	s	ELECT 100uF 20% 16V
C158	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C159	1-126-157-11	s	ELECT 10uF 20% 16V
C160	1-126-157-11	s	ELECT 10uF 20% 16V
C161	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C162	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C163	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C164	1-126-157-11	s	ELECT 10uF 20% 16V
C165	1-126-157-11	s	ELECT 10uF 20% 16V
C166	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
CN151	1-506-469-11	s	CONNECTOR, 4P, MALE
CN152	1-506-469-11	s	CONNECTOR, 4P, MALE
CN153	1-506-471-11	s	CONNECTOR, 6P, MALE
CN154	1-506-469-11	s	CONNECTOR, 4P, MALE
CN155	1-506-469-11	s	CONNECTOR, 4P, MALE
CN156	1-506-472-11	s	CONNECTOR, 7P, MALE
CN157	1-506-467-11	s	CONNECTOR, 2P, MALE
CN165	1-506-468-11	s	CONNECTOR, 3P, MALE
CN166	1-506-468-11	s	CONNECTOR, 3P, MALE
CN167	1-506-468-11	s	CONNECTOR, 3P, MALE
D151	8-719-106-08	s	DIODE RD6.2M-B2
D153	8-719-104-34	s	DIODE 1S2836
D154	8-719-104-34	s	DIODE 1S2836
D155	8-719-104-34	s	DIODE 1S2836
D156	8-719-104-34	s	DIODE 1S2836
D157	8-719-104-34	s	DIODE 1S2836
D158	8-719-104-34	s	DIODE 1S2836
IC151	8-759-982-04	s	IC RC5532M
IC152	8-759-932-64	s	IC BU4052BF
IC153	8-759-932-64	s	IC BU4052BF
IC154	8-759-981-99	s	IC NJM4560M
IC155	8-759-982-04	s	IC RC5532M
IC156	8-759-981-99	s	IC NJM4560M
L101	1-407-519-00	s	INDUCTOR 8.2uH
L102	1-407-519-00	s	INDUCTOR 8.2uH
R151	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R152	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R153	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R154	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R155	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R156	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R157	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R158	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R159	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R160	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R161	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R162	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R163	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R166	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R167	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W

(SW-513 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R168	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R169	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R170	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R171	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R173	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R174	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R175	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R176	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R177	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R178	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R179	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R180	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R181	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R182	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R183	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R184	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R185	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R186	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R187	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R188	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
RV101	1-237-713-11	s	RES, VAR CARBON 100K
RV151	1-238-483-11	s	RES, VAR CARBON 5K
RV152	1-238-483-11	s	RES, VAR CARBON 5K
RV153	1-238-483-11	s	RES, VAR CARBON 5K
RV154	1-238-483-11	s	RES, VAR CARBON 5K
S151	1-516-961-00	s	SWITCH, LEVER SLIDE
S152	1-516-995-00	s	SWITCH, LEVER SLIDE
S153	1-516-961-00	s	SWITCH, LEVER SLIDE

SW-514A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8276-368-A	o	MOUNTED CIRCUIT BOARD, SW-514A
CN602	1-506-486-11	s	CONNECTOR, 7P, MALE
CN603	1-506-483-21	s	CONNECTOR, 4P, MALE
CN604	1-506-481-11	s	CONNECTOR, 2P, MALE
S601	1-571-908-11	s	SWITCH, SLIDE
S602	1-554-481-00	s	SWITCH, SLIDE
S603	1-554-481-00	s	SWITCH, SLIDE
S604	1-554-481-00	s	SWITCH, SLIDE
S605	1-554-481-00	s	SWITCH, SLIDE
S606	1-554-481-00	s	SWITCH, SLIDE
S607	1-554-481-00	s	SWITCH, SLIDE
S608	1-554-481-00	s	SWITCH, SLIDE
S609	1-554-481-00	s	SWITCH, SLIDE

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

SW-532 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-643-487-12	o	PRINTED CIRCUIT BOARD, SW-532
CN171	1-506-482-11	s	CONNECTOR, 3P, MALE
S105	1-516-995-00	s	SWITCH, LEVER SLIDE

VO-37A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-318-A	o	MOUNTED CIRCUIT BOARD, VO-37A
1pc	3-173-464-01	o	SHIELD (A), VO BOARD
1pc	3-173-465-01	o	SHIELD (B), VO BOARD
1pc	7-682-547-04	s	SCREW +B 3X6
1pc	3-168-157-01	o	BRACKET (R), VO BOARD
1pc	3-168-158-01	o	BRACKET (L), VO BOARD
3pcs	3-703-353-08	o	SUPPORTER, PC BOARD
2pcs	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3X6
1pc	3-659-918-01	o	HEAT SINK, TR
C1	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C2	1-126-516-11	s	ELECT 120uF 20% 16V
C3	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C4	1-126-516-11	s	ELECT 120uF 20% 16V
C5	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C6	1-124-589-11	s	ELECT 47uF 20% 16V
C30	1-124-584-00	s	ELECT 100uF 20% 10V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C101	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C102	1-163-135-00	s	CERAMIC, CHIP 560pF 5% 50V
C103	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C104	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C105	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C106	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C107	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C108	1-124-638-11	s	ELECT 22uF 20% 10V
C109	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C110	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C111	1-124-257-00	s	ELECT 2.2uF 20% 50V
C112	1-126-163-11	s	ELECT 4.7uF 20% 50V
C113	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C114	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C115	1-124-442-00	s	ELECT 330uF 20% 6.3V
C116	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C117	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C118	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C119	1-124-589-11	s	ELECT 47uF 20% 16V
C120	1-124-257-00	s	ELECT 2.2uF 20% 50V
C121	1-124-589-11	s	ELECT 47uF 20% 16V
C122	1-126-163-11	s	ELECT 4.7uF 20% 50V
C123	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C125	1-163-136-00	s	CERAMIC, CHIP 620pF 1% 50V
C126	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C127	1-124-257-00	s	ELECT 2.2uF 20% 50V
C128	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C129	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C130	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C131	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C132	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C133	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C134	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C135	1-124-465-00	s	ELECT 0.47uF 20% 50V
C136	1-124-589-11	s	ELECT 47uF 20% 16V
C137	1-124-589-11	s	ELECT 47uF 20% 16V
C141	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C142	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C143	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C145	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C146	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C147	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C148	1-124-589-11	s	ELECT 47uF 20% 16V
C149	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C150	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C151	1-124-589-11	s	ELECT 47uF 20% 16V
C152	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C153	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C154	1-124-589-11	s	ELECT 47uF 20% 16V
C155	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C156	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C157	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C158	1-163-108-00	s	CERAMIC, CHIP 43pF 5% 50V
C160	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C161	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C162	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C163	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C164	1-163-091-00	s	CERAMIC, CHIP 8pF 50V
C165	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C167	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C170	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C172	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C173	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C174	1-124-589-11	s	ELECT 47uF 20% 16V
C175	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C180	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C181	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C182	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C201	1-124-589-11	s	ELECT 47uF 20% 16V
C202	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C203	1-124-589-11	s	ELECT 47uF 20% 16V
C204	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C205	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C208	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C209	1-163-112-00	s	CERAMIC, CHIP 62pF 5% 50V
C211	1-164-491-11	s	CERAMIC, CHIP 300pF 1% 50V
C213	1-124-589-11	s	ELECT 47uF 20% 16V
C214	1-126-163-11	s	ELECT 4.7uF 20% 50V
C215	1-126-163-11	s	ELECT 4.7uF 20% 50V
C216	1-124-589-11	s	ELECT 47uF 20% 16V
C218	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C219	1-124-589-11	s	ELECT 47uF 20% 16V
C220	1-124-589-11	s	ELECT 47uF 20% 16V
C221	1-124-589-11	s	ELECT 47uF 20% 16V
C222	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C223	1-124-589-11	s	ELECT 47uF 20% 16V
C224	1-124-589-11	s	ELECT 47uF 20% 16V
C226	1-124-589-11	s	ELECT 47uF 20% 16V
C227	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C228	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C230	1-124-589-11	s	ELECT 47uF 20% 16V
C231	1-126-163-11	s	ELECT 4.7uF 20% 50V
C232	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C233	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C234	1-124-589-11	s	ELECT 47uF 20% 16V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C240	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C242	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C243	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C244	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C245	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C246	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C247	1-163-124-00	s	CERAMIC, CHIP 200pF 5% 50V
C249	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C250	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C251	1-124-589-11	s	ELECT 47uF 20% 16V
C252	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C261	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C262	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C263	1-162-283-31	s	CERAMIC 120pF 10% 50V
C302	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-584-00	s	ELECT 100uF 20% 10V
C310	1-124-584-00	s	ELECT 100uF 20% 10V
C311	1-124-589-11	s	ELECT 47uF 20% 16V
C312	1-124-589-11	s	ELECT 47uF 20% 16V
C313	1-124-589-11	s	ELECT 47uF 20% 16V
C314	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C315	1-131-360-00	s	TANTALUM 15uF 10% 10V
C315 *1	1-131-365-00	s	TANTALUM 10uF 10% 16V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C322	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C323	1-124-589-11	s	ELECT 47uF 20% 16V
C324	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C325	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C326	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C327	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C330	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C331	1-124-589-11	s	ELECT 47uF 20% 16V
C332	1-126-163-11	s	ELECT 4.7uF 20% 50V
C333	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C334	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C335	1-124-589-11	s	ELECT 47uF 20% 16V
C336	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C337	1-124-589-11	s	ELECT 47uF 20% 16V
C340	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C341	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C342	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C343	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C344	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C345	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C346	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C347	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C348	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C349	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C350	1-124-589-11	s	ELECT 47uF 20% 16V
C351	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C352	1-124-584-00	s	ELECT 100uF 20% 10V
C352 *1	1-124-589-11	s	ELECT 47uF 20% 16V
C353	1-124-584-00	s	ELECT 100uF 20% 10V
C353 *1	1-124-589-11	s	ELECT 47uF 20% 16V
C354	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C356	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C357	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C358	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C359	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C360	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C361	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C363	1-124-442-00	s	ELECT 330uF 20% 6.3V

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C364	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C365	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C366	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C370	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C371	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C380	1-124-584-00	s	ELECT 100uF 20% 10V
C381	1-124-584-00	s	ELECT 100uF 20% 10V
C383	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C384	1-124-589-11	s	ELECT 47uF 20% 16V
C385	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C386	1-124-589-11	s	ELECT 47uF 20% 16V
C390	1-124-589-11	s	ELECT 47uF 20% 16V
C391	1-124-589-11	s	ELECT 47uF 20% 16V
C402	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C407	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C408	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C410	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C411	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C413	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C416	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C417	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C418	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C419	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C420	1-124-584-00	s	ELECT 100uF 20% 10V
C422	1-124-584-00	s	ELECT 100uF 20% 10V
C422 *1	1-124-589-11	s	ELECT 47uF 20% 16V
C423	1-107-077-00	s	MICA 47pF 5% 50V
C425	1-124-589-11	s	ELECT 47uF 20% 16V
C426	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C427	1-124-589-11	s	ELECT 47uF 20% 16V
C428	1-124-589-11	s	ELECT 47uF 20% 16V
C429	1-124-589-11	s	ELECT 47uF 20% 16V
C430	1-124-589-11	s	ELECT 47uF 20% 16V
C431	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C432	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C433	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C434	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C435	1-126-157-11	s	ELECT 10uF 20% 16V
C436	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C440	1-126-157-11	s	ELECT 10uF 20% 16V
C441	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C450	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C451	1-163-108-00	s	CERAMIC, CHIP 43pF 5% 50V
C452	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C453	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C454	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C455	1-126-157-11	s	ELECT 10uF 20% 16V
C460	1-124-584-00	s	ELECT 100uF 20% 10V
C461	1-131-377-00	s	TANTALUM 10uF 10% 10V
C461 *1	1-131-349-00	s	TANTALUM 2.2uF 10% 16V
C471	1-124-584-00	s	ELECT 100uF 20% 10V
C472	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C473	1-124-589-11	s	ELECT 47uF 20% 16V
C480	1-124-589-11	s	ELECT 47uF 20% 16V
C481	1-124-257-00	s	ELECT 2.2uF 20% 50V
C482	1-124-584-00	s	ELECT 100uF 20% 10V
C483	1-124-584-00	s	ELECT 100uF 20% 10V
C488	1-124-584-00	s	ELECT 100uF 20% 10V
C489	1-124-471-00	s	ELECT 1000uF 20% 6.3V

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C491	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C492	1-126-925-11	s	ELECT 470uF 20% 10V
C493	1-124-471-00	s	ELECT 1000uF 20% 6.3V
C494	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C495	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C496	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C497	1-126-157-11	s	ELECT 10uF 20% 16V
C498	1-124-584-00	s	ELECT 100uF 20% 10V
C499	1-124-471-00	s	ELECT 1000uF 20% 6.3V
CN201	1-506-471-11	s	CONNECTOR, 6P, MALE
CN203	1-506-475-11	s	CONNECTOR, 10P, MALE
CN211	1-562-992-11	o	CONNECTOR, FPC 26P, FEMALE
CN221	1-506-474-11	s	CONNECTOR, 9P, MALE
CN222	1-506-470-11	s	CONNECTOR, 5P, MALE
CN231	1-506-470-11	s	CONNECTOR, 5P, MALE
CN232	1-506-473-11	s	CONNECTOR, 8P, MALE
D10	8-719-400-18	s	DIODE MA152WK
D101	8-719-400-18	s	DIODE MA152WK
D102	8-719-104-10	s	DIODE 1SS99
D102 *1			NOT IN USE.
D103	8-719-400-18	s	DIODE MA152WK
D130	8-719-911-19	s	DIODE 1SS119
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D301	8-719-400-18	s	DIODE MA152WK
D401	8-719-911-19	s	DIODE 1SS119
DL201	1-415-677-11	s	DELAY LINE 370ns
DL301	1-415-559-11	s	DELAY LINE 600ns
FL101	1-236-911-11	s	FILTER, LOW-PASS 3.0MHz
FL201	1-236-716-11	s	FILTER, LOW-PASS 5.0MHz
FL301	1-239-085-11	s	FILTER, LOW-PASS 5.0MHz
FL302	1-239-085-11	s	FILTER, LOW-PASS 5.0MHz
IC1	8-759-520-06	s	IC XRA17809T
IC10	8-759-038-46	s	IC TC7S00F
IC101	8-759-420-64	s	IC AN3237FB
IC102	8-759-710-07	s	IC NJM2234M
IC201	8-759-710-07	s	IC NJM2234M
IC202	8-759-051-54	s	IC VC2076MP
IC203	8-759-710-86	s	IC NJM2233BM
IC302	8-759-710-86	s	IC NJM2233BM
IC303	8-752-334-55	s	IC CXD1175AM
IC304	8-752-342-61	s	IC CXD2105AQ
IC306	8-759-710-07	s	IC NJM2234M
IC402	8-759-710-07	s	IC NJM2234M
IC403	8-759-710-07	s	IC NJM2234M
IC404	8-759-710-86	s	IC NJM2233BM
IC405	8-759-710-07	s	IC NJM2234M
IC406	8-759-710-07	s	IC NJM2234M
IC407	8-759-710-07	s	IC NJM2234M
IC440	8-759-925-60	s	IC BA401
IC441	8-759-925-60	s	IC BA401
IC442	8-752-039-13	s	IC CXA1413L
IC491	8-759-057-43	s	IC MC14576BF
IC492	8-759-057-40	s	IC MC14577BF
L1	1-410-482-31	s	INDUCTOR 100uH
L101	1-408-420-00	s	INDUCTOR 82uH
L102	1-410-482-31	s	INDUCTOR 100uH

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L103	1-410-482-31	s	INDUCTOR 100uH
L105	1-408-416-00	s	INDUCTOR 39uH
L106	1-408-416-00	s	INDUCTOR 39uH
L108	1-410-473-11	s	INDUCTOR 18uH
L109	1-410-482-31	s	INDUCTOR 100uH
L110	1-410-482-31	s	INDUCTOR 100uH
L111	1-410-478-11	s	INDUCTOR 47uH
L112	1-408-416-00	s	INDUCTOR 39uH
L115	1-408-411-00	s	INDUCTOR 15uH
L116	1-408-411-00	s	INDUCTOR 15uH
L117	1-410-478-11	s	INDUCTOR 47uH
L118	1-410-482-31	s	INDUCTOR 100uH
L120	1-408-416-00	s	INDUCTOR 39uH
L121	1-408-423-00	s	INDUCTOR 150uH
L122	1-408-413-00	s	INDUCTOR 22uH
L201	1-410-482-31	s	INDUCTOR 100uH
L202	1-410-482-31	s	INDUCTOR 100uH
L210	1-410-489-11	s	INDUCTOR 390uH
L213	1-408-423-00	s	INDUCTOR 150uH
L215	1-410-482-31	s	INDUCTOR 100uH
L301	1-410-482-31	s	INDUCTOR 100uH
L302	1-410-482-31	s	INDUCTOR 100uH
L310	1-410-482-31	s	INDUCTOR 100uH
L311	1-410-470-11	s	INDUCTOR 10uH
L312	1-410-471-11	s	INDUCTOR 12uH
L320	1-408-420-00	s	INDUCTOR 82uH
L440	1-408-423-00	s	INDUCTOR 150uH
L441	1-408-414-00	s	INDUCTOR 27uH
L444	1-410-482-31	s	INDUCTOR 100uH
L490	1-410-482-31	s	INDUCTOR 100uH
Q10	8-729-901-06	s	TRANSISTOR DTA144EK
Q11	8-729-216-22	s	TRANSISTOR 2SA1162
Q12	8-729-901-01	s	TRANSISTOR DTC144EK
Q13	8-729-901-01	s	TRANSISTOR DTC144EK
Q14	8-729-901-06	s	TRANSISTOR DTA144EK
Q15	8-729-901-01	s	TRANSISTOR DTC144EK
Q16	8-729-216-22	s	TRANSISTOR 2SA1162
Q17	8-729-901-06	s	TRANSISTOR DTA144EK
Q19	8-729-901-06	s	TRANSISTOR DTA144EK
Q20	8-729-901-01	s	TRANSISTOR DTC144EK
Q21	8-729-901-01	s	TRANSISTOR DTC144EK
Q22	8-729-901-01	s	TRANSISTOR DTC144EK
Q30	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q31	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q32	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q40	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q41	8-729-202-38	s	TRANSISTOR 2SC3326N
Q101	8-729-901-01	s	TRANSISTOR DTC144EK
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-01	s	TRANSISTOR DTC144EK
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q105	8-729-901-01	s	TRANSISTOR DTC144EK
Q106	8-729-901-01	s	TRANSISTOR DTC144EK
Q107	8-729-901-01	s	TRANSISTOR DTC144EK
Q108	8-729-901-01	s	TRANSISTOR DTC144EK
Q109	8-729-901-01	s	TRANSISTOR DTC144EK
Q110	8-729-901-01	s	TRANSISTOR DTC144EK
Q111	8-729-901-01	s	TRANSISTOR DTC144EK
Q112	8-729-901-01	s	TRANSISTOR DTC144EK

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q113	8-729-901-01	s	TRANSISTOR DTC144EK
Q114	8-729-901-01	s	TRANSISTOR DTC144EK
Q116	8-729-901-01	s	TRANSISTOR DTC144EK
Q118	8-729-901-06	s	TRANSISTOR DTA144EK
Q119	8-729-901-06	s	TRANSISTOR DTA144EK
Q120	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q121	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q122	8-729-216-22	s	TRANSISTOR 2SA1162
Q123	8-729-901-06	s	TRANSISTOR DTA144EK
Q124	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q125	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q126	8-729-216-22	s	TRANSISTOR 2SA1162
Q128	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q130	8-729-216-22	s	TRANSISTOR 2SA1162
Q131	8-729-901-06	s	TRANSISTOR DTA144EK
Q140	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q141	8-729-901-01	s	TRANSISTOR DTC144EK
Q150	8-729-900-89	s	TRANSISTOR DTC144ES
Q151	8-729-900-89	s	TRANSISTOR DTC144ES
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q204	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q205	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q206	8-729-216-22	s	TRANSISTOR 2SA1162
Q207	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q208	8-729-216-22	s	TRANSISTOR 2SA1162
Q209	8-729-216-22	s	TRANSISTOR 2SA1162
Q210	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q211	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q212	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q213	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q214	8-729-901-06	s	TRANSISTOR DTA144EK
Q215	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q216	8-729-901-01	s	TRANSISTOR DTC144EK
Q261	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q262	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q304	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q305	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q306	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q310	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q311	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q312	8-729-216-22	s	TRANSISTOR 2SA1162
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q320	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q323	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q324	8-729-216-22	s	TRANSISTOR 2SA1162
Q326	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q327	8-729-216-22	s	TRANSISTOR 2SA1162
Q328	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q329	8-729-216-22	s	TRANSISTOR 2SA1162
Q333	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q334	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q335	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q336	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q337	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q339	8-729-202-38	s	TRANSISTOR 2SC3326N
Q402	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q420	8-729-216-22	s	TRANSISTOR 2SA1162

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q421	8-729-216-22	s	TRANSISTOR 2SA1162
Q430	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q431	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q432	8-729-903-97	s	TRANSISTOR FMS1FE
Q433	8-729-903-97	s	TRANSISTOR FMS1FE
Q434	8-729-216-22	s	TRANSISTOR 2SA1162
Q435	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q438	8-729-216-22	s	TRANSISTOR 2SA1162
Q439	8-729-216-22	s	TRANSISTOR 2SA1162
Q440	8-729-216-22	s	TRANSISTOR 2SA1162
Q480	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q481	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q482	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q483	8-729-230-49	s	TRANSISTOR 2SC2712YG
R12	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R13	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R14	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R15	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R20	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R21	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R22	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R30	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R31	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R32	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R33	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R34	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R35	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R36	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R37	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R41	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R42	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R43	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R50	1-216-295-00	s	METAL, CHIP 0-OHM
R101	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R102	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R103	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R104	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R105	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R106	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R107	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R108	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R109	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R110	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R111	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R112	1-216-115-00	s	METAL, CHIP 560K 5% 1/10W
R114	1-247-887-00	s	CARBON 220K 5% 1/4W
R115	1-216-129-00	s	METAL, CHIP 2.2M 5% 1/10W
R116	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R117	1-216-668-11	s	METAL, CHIP 5.1K 0.5% 1/10W
R118	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R119	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R120	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R121	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R122	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R123	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W
R124	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R125	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R126	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R127	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R128	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R129	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R130	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R132	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R132 *1	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R135	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R136	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R136 *1	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R137	1-249-429-11	s	CARBON 10K 5% 1/4W
R138	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R139	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R140	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R140 *1	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R141	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R142	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R142 *1	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R143	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R143 *1	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R144	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R145	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R146	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R148	1-216-654-11	s	METAL, CHIP 1.3K 0.5% 1/10W
R151	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R152	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R155	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R156	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R157	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R158	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R159	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R160	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R161	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R162	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R163	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R164	1-216-295-00	s	METAL, CHIP 0-OHM
R165	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R166	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R168	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R169	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R170	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R172	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R173	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R174	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R175	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R176	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R177	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R178	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R179	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R183	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R184	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R185	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R186	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R187	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R188	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R190	1-249-429-11	s	CARBON 10K 5% 1/4W
R196	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R201	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R202	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R203	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R205	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R207	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R209	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R210	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R211	1-216-295-00	s	METAL, CHIP 0-OHM
R213	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R214	1-216-295-00	s	METAL, CHIP 0-OHM
R217	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R218	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R219	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R220	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R221	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R222	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R223	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R224	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R225	1-216-656-11	s	METAL, CHIP 1.6K 0.5% 1/10W
R226	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R227	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R228	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R229	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R230	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R232	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R250	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R251	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R252	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R253	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R254	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R255	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R256	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R257	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R258	1-216-642-11	s	METAL, CHIP 430 0.5% 1/10W
R259	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R260	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R261	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R264	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R265	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R270	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R271	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R272	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R277	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R278	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R279	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R280	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R281	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R282	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R285	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R286	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R287	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R290	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R291	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R293	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R294	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R295	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R296	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R300	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R300 *1	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R310	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R311	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R312	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R312 *1	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R313	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R314	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R314 *1	1-216-659-11	s	METAL, CHIP 2.2k 0.5% 1/10W
R315	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R316	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R317	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R318	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R319	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R320	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R322	1-215-422-00	s	METAL 1.1K 1% 1/6W
R322 *1	NOT IN USE.		
R323	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R324	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R327	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R328	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R329	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R330	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R331	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R332	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R333	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R335	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R336	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R337	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R338	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R339	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R341	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R342	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R343	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R344	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R345	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R346	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R349	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R350	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R351	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R352	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R353	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R354	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R355	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R356	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R360	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R361	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R362	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R363	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R364	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R366	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R367	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R368	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R369	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R374	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R375	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R376	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R377	1-216-646-11	s	METAL, CHIP 620 0.5% 1/10W
R378	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R379	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R380	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R381	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R382	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R383	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R384	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R385	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R393	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R394	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R395	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R396	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R397	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R398	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R399	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R400	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R401	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R406	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R407	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R408	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R410	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R411	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R421	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R422	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R423	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R424	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R425	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R426	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R431	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R440	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R441	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R442	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R443	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R444	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R445	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R446	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R447	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R448	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R449	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R450	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R451	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R452	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R453	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R454	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R455	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R456	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R457	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R458	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R459	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R461	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R462	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R466	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R467	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R467	*1 1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R468	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R469	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R470	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R470	*1 1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R471	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R472	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R473	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R474	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R475	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R476	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R479	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R480	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R481	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R482	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R483	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R484	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R485	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R486	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R487	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R488	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R489	1-215-441-00	s	METAL 6.8K 1% 1/6W
R490	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R492	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R494	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R495	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R496	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R497	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R498	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R499	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
RV30	1-238-012-11	s	RES, ADJ CARBON 1K
RV101	1-238-015-11	s	RES, ADJ CARBON 4.7K
RV102	1-238-016-11	s	RES, ADJ CARBON 10K
RV103	1-238-016-11	s	RES, ADJ CARBON 10K
RV104	1-238-017-11	s	RES, ADJ CARBON 22K
RV105	1-238-012-11	s	RES, ADJ CARBON 1K
RV106	1-238-017-11	s	RES, ADJ CARBON 22K
RV107	1-238-017-11	s	RES, ADJ CARBON 22K
RV108	1-238-017-11	s	RES, ADJ CARBON 22K
RV109	1-238-015-11	s	RES, ADJ CARBON 4.7K
RV202	1-238-011-11	s	RES, ADJ CARBON 470
RV210	1-238-543-11	s	RES, ADJ CARBON 470
RV211	1-238-543-11	s	RES, ADJ CARBON 470
RV260	1-238-543-11	s	RES, ADJ CARBON 470
RV310	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV311	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV401	1-238-012-11	s	RES, ADJ CARBON 1K
RV402	1-238-012-11	s	RES, ADJ CARBON 1K
RV480	1-238-012-11	s	RES, ADJ CARBON 1K
RV481	1-238-013-11	s	RES, ADJ CARBON 2.2K
RV482	1-238-013-11	s	RES, ADJ CARBON 2.2K

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠1-413-730-11	s	SWITCHING REGULATOR ZSSP067HA
1pc	1-464-801-12	s	ENCODER, ROTARY
1pcs	⚠1-532-203-11	s	FUSE T2A 250V "AC-148 BOARD"
1pc	1-590-308-11	o	WIRE, FLEXIBLE CARD 20P
1pc	1-690-613-11	o	WIRE, FLEXIBLE CARD 26P
1pc	1-690-614-12	o	WIRE, FLEXIBLE CARD 28P
CN1001	⚠1-580-375-11	s	INLET, AC 3P, MALE "AC IN"
CN1002	1-507-743-21	s	JACK, STEREO MINIATURE
CS1001	1-806-682-91	s	SENSOR, DEW CONDENSATION (with harness)
H1001	X-3166-709-1	o	HEAD ASSY, ACE
H1002	8-848-578-12	s	DRUM ASSY DZH-41A-R
	8-848-579-02	s	UPPER DRUM ASSY DZR-41-R
H1003	1-543-695-11	s	HEAD, FULL-ERASE
M904	X-3727-784-1	s	MOTOR ASSY(includes CM-14 board) "CASSETTE COMPARTMENT"
M1002	8-835-480-02	s	MOTOR, DC SCV-0401A "CAPSTAN"
M1003	8-835-432-01	s	MOTOR, DC SRV-0201A "T-REEL"
M1004	8-835-432-01	s	MOTOR, DC SRV-0201A "S-REEL"
M1005	X-3165-593-2	o	MOTOR ASSY, CAM "LOADING"
PM1001	1-454-531-11	s	SOLENOID, PLUNGER (with harness) "BRAKE"
PM1002	1-454-434-21	s	SOLENOID, PLUNGER (with harness) "PINCH"
PM1003	1-454-334-71	s	SOLENOID, PLUNGER (with harness) "T-BRAKE"
S1001	1-571-099-11	s	SWITCH, MICRO "CASSETTE DOWN"
S1002	1-570-771-11	s	SWITCH, MICRO "MISS REC"
S1003	1-571-099-11	s	SWITCH, MICRO "VHS CASSETTE"
S1004	⚠1-570-117-41	s	SWITCH, ROCKER (AC POWER) "POWER"

HARNESS'S CHILD PARTS

Ref. No. or Q'ty	Part No.	SP	Description

HARNESS(A-ERASE):CN302/AU-179A board to CN617/AH-40 board

CN302F	1-569-197-41	o	HOUSING, 4P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN617F	1-569-197-41	o	HOUSING, 4P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(A-HEAD):CN315,316/AU-179A board to CN616/AH-40 board

CN315F	1-569-196-21	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN316F	1-569-196-41	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN616F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AC INLET): to CN903/AC-148 board

1pc	1-535-316-11	o	TERMINAL, GROUND (M4)
CN903F	⚠1-562-211-11	o	HOUSING, VH 3P
2pcs	⚠1-562-210-11	s	CONTACT, FEMALE, AWG18-22
CN1001	⚠1-580-375-11	s	INLET, AC 3P, MALE
1pc	4-605-946-01	o	COVER, AC INLET

HARNESS(AU-CONT):CN142/SS-49C board to CN311/AU-179A board

Unstock part

HARNESS(AU IN1):CN154/SW-513 board to CN501/CP-196 board

CN154F	1-569-197-31	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN501F	1-569-197-31	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU IN2):CN155/SW-513 board to CN506/CP-196 board

CN155F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN501F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU MONITOR):CN307/AU-179A board to CN151/SW-513 board, CN603/SW-514A board

CN307F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN151F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN603F	1-569-197-21	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

HARNESS(AU-MT):CN150/MT-73 board to CN304/AU-179A board

Unstock part

HARNESS(AU-OUT1):CN310/AU-179A board to CN502/CP-197 board

Ref. No. or Q'ty	Part No.	SP	Description
CN310F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN502F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU-OUT2):CN317/AU-179A board to CN507/CP-197 board

Ref. No. or Q'ty	Part No.	SP	Description
CN317F	1-569-199-31	o	HOUSING, 6P
6pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN507F	1-569-199-31	o	HOUSING, 6P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU REG):CN140/SS-49C board to CN313/AU-179A board

Unstock part

HARNESS(AU SELECT):CN157/SW-513 board to CN604/SW-514 board

Unstock part

HARNESS(AU VR1):CN152/SW-513 board to CN305/AU-179A board

Unstock part

HARNESS(AU VR2):CN153/SW-513 board to CN309/AU-179A board

Unstock part

HARNESS(CAPSTAN):CN632/DR-176A board to CN603/CAPSTAN motor

Ref. No. or Q'ty	Part No.	SP	Description
CN632F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
1pc	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN603F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
1pc	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CASSECON):CN105/SS-49C board to CN001/CM-14 board

Unstock part

HARNESS(CASSETTE DOWN): to CN652/HN-160 board

Ref. No. or Q'ty	Part No.	SP	Description
CN652F	1-569-195-21	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1001	1-571-099-11	s	SWITCH, MICRO

HARNESS(CNR):CN222/VO-37A board to CN302/NR-40A board

Ref. No. or Q'ty	Part No.	SP	Description
CN222F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN302F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CONTROL-S):CN152/KY-229A board to CONTROL-S

Ref. No. or Q'ty	Part No.	SP	Description
CN152F	1-569-196-21	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CP):CN509/CP-197 board to CN510/CP-196 board

Unstock part

HARNESS(CR-NR):CN102/NR-40A board to CN214/CR-42 board

Ref. No. or Q'ty	Part No.	SP	Description
CN102F	1-569-205-11	o	HOUSING, 12P
12pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN214F	1-569-205-11	s	HOUSING, 12P
12pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CR-SW):CN166/SW-513 board to CN215/CR-42 board

Unstock part

HARNESS(CTL):CN107/SS-49C board to CN618/AH-40 board

Ref. No. or Q'ty	Part No.	SP	Description
CN107F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN618F	1-569-195-11	s	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(DP 1):CN156/KY-229A board to CN162/DP-166 board

Unstock part

HARNESS(DP 2):CN155/KY-229A board to CN161/DP-166 board

Unstock part

HARNESS(DRUM):CN634/DR-167 board to CN604/DRUM motor

Ref. No. or Q'ty	Part No.	SP	Description
CN634	1-562-748-11	o	HOUSING, BOARD-IN 15P
15pcs	1-564-832-11	o	CONTACT, MALE
CN604F	1-580-938-11	o	HOUSING, 15P
15pcs	1-565-740-11	o	CONTACT, FEMALE

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(HARNESS'S CHILD PARTS)

HARNESS(F-ERASE):CN303/AU-179A board to CN619 /FULL ERASE HEAD

Ref. No. or Q'ty	Part No.	SP	Description
CN303F	1-569-196-31	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN619F	1-569-195-11	s	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(HEADPHONE):CN306/AU-179A board to CN651/HP-54 board

Unstock part

HARNESS(HN VM1):CN731/HN-182 board to CN710 /VM-13(OPTION) board

CN731F	1-569-196-11	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN710F	1-569-196-11	s	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(HN VM2):CN730/HN-182 board to CN711 /VM-13(OPTION) board

Unstock part

HARNESS(IF):CN556/OPTION board to CN561/OPTION board

Unstock part

HARNESS(KY):CN111/SS-49C board to CN151/KY-229A board

Unstock part

HARNESS(KY SW):CN159/KY-229A board to CN167/SW-513 board

Unstock part

HARNESS(KY SW1):CN153/KY-229A board to CN602/SW-514A board

Unstock part

HARNESS(KY SW2):CN117/SS-49C board to CN157/KY-229A board

Unstock part

HARNESS(LD MOTOR):CN106/SS-49C board to CN620/LD-35 board

CN106F	1-562-735-11	o	HOUSING, BOARD-IN 2P
2pcs	1-564-831-11	s	CONTACT, MALE
CN620F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(LED):CN654/HN-160 board to LE-80 board

CN654F	1-569-195-41	s	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

HARNESS(LS SENSOR):CN635/DR-167 board to CN610/SE-151 board

Ref. No. or Q'ty	Part No.	SP	Description
CN635F	1-562-735-11	o	HOUSING, BOARD-IN 2P
2pcs	1-564-832-11	o	CONTACT, MALE
CN610F	1-569-195-11	o	HOUSING, 2P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(MIC):CN156/SW-513 board to CN652/HP-54 board

CN156F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN652F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(MISS REC): to CN659/HN-160 board

CN659F	1-569-195-21	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1002	1-570-771-11	s	SWITCH, MICRO

HARNESS(MT SW):CN163/MT-73 board to CN165/SW-513 board

Unstock part

HARNESS(NR-PB):CN101/NR-40A board to CN221/VO-37A board

CN101F	1-569-202-11	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN221F	1-569-202-11	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(OPTION-1):CN114/SS-49C board to CN551/OPTION board

Unstock part

HARNESS(OPTION-2):CN110/SS-49C board to CN552/OPTION board

Unstock part

HARNESS(OPTION-3):CN508/CP-197 board to CN555/OPTION board

Unstock part

HARNESS(OPTION-4):CN312/AU-179A board to CN554/OPTION board

Unstock part

HARNESS(OPTION-5):CN112/SS-49C board to CN568/OPTION board

Unstock part

HARNESS(OPTION-6):CN511/CP-196 board to CN559/OPTION board

Unstock part

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(HARNESS'S CHILD PARTS)

HARNESS(OPTION-7):CN103/NR-40A board to CN560/OPTION board

Unstock part

HARNESS(POWER SW):CN901/SW REG to CN904/AC-148 board

Ref. No. or Q'ty	Part No.	SP	Description
CN901F	⚠1-562-211-11	o	HOUSING, VH 3P
2pcs	⚠1-562-210-11	s	CONTACT, FEMALE, AWG18-22
CN904F	⚠1-562-285-11	o	HOUSING, VH 4P
2pcs	⚠1-562-210-11	s	CONTACT, FEMALE, AWG18-22
S1004	⚠1-570-544-11	s	SWITCH, PUSH (AC POWER)
1pc	2-269-962-00	o	COVER, SWITCH

HARNESS(RP-AU):CN308/AU-179A board to CN805/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN308F	1-569-199-31	o	HOUSING, 6P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN805F	1-569-199-31	o	HOUSING, 6P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP-CONT):CN132/SS-49C board to CN803/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN132F	1-569-199-41	o	HOUSING, 6P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN803F	1-569-199-41	o	HOUSING, 6P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP-FSC):CN206/VO-37A board to CN806/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN206F	1-562-738-11	o	HOUSING, BOARD-IN 5P
5pcs	1-564-831-11	o	CONTACT, MALE
CN806F	1-569-198-11	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP-PB):CN202/VO-37A board to CN802/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN202F	1-569-740-11	s	HOUSING, BOARD-IN 7P
7pcs	1-564-831-11	o	CONTACT, MALE
CN802F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP REC):CN207/VO-37A board to CN807/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN207F	1-569-739-11	s	HOUSING, BOARD-IN 6P
6pcs	1-564-831-11	o	CONTACT, MALE
CN807F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

HARNESS(RP VO):CN208/VO-37A board to CN808/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN208F	1-562-736-11	o	HOUSING, BOARD-IN 3P
3pcs	1-564-831-11	o	CONTACT, MALE
CN808F	1-569-196-11	o	HOUSING, 3P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(S-DR1):CN1/DR-153(b) board to CN1/S-REEL motor

Unstock part

HARNESS(S-DR2):CN2/DR-153(b) board to CN2/S-REEL motor

Unstock part

HARNESS(S-REEL):CN123/SS-49C board to CN3/DR-153(b) board

Unstock part

HARNESS(S-TEN):CN657/HN-160 board to LE-86 & SE-159 boards

Ref. No. or Q'ty	Part No.	SP	Description
CN657F	1-569-195-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(SEARCH):CN154/KY-229A board to ROTARY ENCODER (SEARCH DIAL)

Ref. No. or Q'ty	Part No.	SP	Description
CN154F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(SS-CP):CN116/SS-49C board to CN503/CP-19 board

Ref. No. or Q'ty	Part No.	SP	Description
CN116F	1-569-206-11	o	HOUSING, 13P
7pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(SS-CR):CN133/SS-49C board to CN213/CR-42 board

Unstock part

HARNESS(SS-NR):CN133/SS-49C board to CN213/NR-40 board

Unstock part

HARNESS(SS REG):CN100/SS-49C board to CN902/SW REG

Ref. No. or Q'ty	Part No.	SP	Description
CN100F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-11	o	CONTACT, FEMALE
CN902F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-11	o	CONTACT, FEMALE

HARNESS(SV-OUT):CN232/VO-37A board to CN505/CP-17

Ref. No. or Q'ty	Part No.	SP	Description
CN232F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE AWG24-30
CN505F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE AWG24-30

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description

HARNESS(SW-1):CN102/SS-49C board to CN658/HN-160 board

Unstock part

HARNESS(SW-2):CN103/SS-49C board to CN655/HN-160 board

Unstock part

HARNESS(T BRAKE C):DR-167 board to CN1/DUS-544 board

CN1F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(T-DR1):CN1/DR-153(a) board to CN1/T-REEL motor

Unstock part

HARNESS(T-DR2):CN2/DR-153(a) board to CN2/T-REEL motor

Unstock part

HARNESS(TC):CN557/OPTION board to CN562/OPTION board

Unstock part

HARNESS(T-REEL):CN124/SS-49C board to CN3/DR-153(a) board

Unstock part

HARNESS(T-TOP):CN651/HN-160 board to SE-152 board

CN651F	1-569-195-11	s	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(TIMER):CN158/KY-229A board to CN171/SW-532 board

Unstock part

HARNESS(VHS CASSETTE): to CN653/HN-160 board

CN653F	1-569-195-31	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1003	1-571-099-11	s	SWITCH, MICRO

HARNESS(VM-NR1):CN201/NR-40A board to CN701/VM-13(OPTION) board

CN201F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN701F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description

HARNESS(VM-NR2):CN301/NR-40A board to CN702/VM-13(OPTION) board

CN301F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN702F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CP1):CN231/VO-37A board to CN504/CP-196 board

CN231F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN504F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CONT):CN203/VO-37A board to CN131/SS-49C board

Unstock part

HARNESS(VO REG):CN201/VO-37A board to CN130/SS-49C board

Unstock part

BRAKE SOLENOID: to CN656/HN-160 board

CN656F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

DEW CONDENSATION SENSOR: to CN108/SS-49C board

CN108F	1-562-147-11	o	HOUSING, 2P
2pcs	1-564-026-00	s	CONTACT, FEMALE, AWG26-30

PINCH SOLENOID: to CN118/SS-49C board

CN118F	1-569-196-31	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

T-BRAKE SOLENOID: to CN633/DR-167 board

CN633F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430

14-4. PACKING MATERIAL AND ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠1-590-910-11	s	CORD, POWER 3P(EK)
1pc	3-176-270-01	o	INDIVIDUAL CARTON
1pc	3-176-268-01	o	CUSHION (UPPER)
1pc	3-176-269-01	o	CUSHION (LOWER)
1pc	3-694-922-01	o	SHEET, PROTECTION
1pc	3-755-054-42	s	MANUAL, INSTRUCTION(E,F)
1pc	3-755-054-52	s	MANUAL, INSTRUCTION(G,I)

14-5. OPTIONAL FIXTURES

Part No.	SP	Description
H-7099-035-H	o	TORQUE GAUGE ADAPTOR
H-7099-039-H	o	TORQUE GAUGE
H-7099-052-H	o	ALIGNMENT TAPE, JVC-MH-2(PAL)
J-6080-811-A	o	GUIDE HEIGHT ADJ. DRIVER
or		
J-6082-044-A	o	GUIDE HEIGHT ADJ. DRIVER
J-6080-840-A	o	SMALL MIRROR
J-6090-014-A	o	MOLYCOTE GREASE EM-30LG
or		
4-918-645-01	o	MOLYCOTE GREASE EM-30L
J-6380-040-A	o	RG REFERENCE PIN (1)
J-6380-050-A	o	RG REFERENCE PIN (2)
J-6380-080-A	o	REFERENCE PLATE
J-6380-090-A	o	REEL TABLE HEIGHT ADJ. TOOL
J-6380-550-A	o	MASTER BLOCK
J-6380-700-A	o	MASTER BLOCK
J-6380-710-A	o	X VALUE ADJUSTMENT TOOL
J-6381-370-A	o	RP EXTENSION TOOL
J-6381-380-A	o	S-BNC VIDEO CABLE
J-6381-910-A	o	Y/C DELAY ADJUSTMENT TOOL
2-034-697-00	o	CLEANING CLOTH
7-700-736-05	o	L-SHAPED HEXAGONAL WRENCH(1.5mm)
7-700-736-06	o	L-SHAPED HEXAGONAL WRENCH(0.89mm)
7-700-751-02	o	BOX DRIVER(5.5mm)
8-192-602-48	o	ALIGNMENT TAPE, KRV-4821PSA
8-192-603-51	o	ALIGNMENT TAPE, KRV-35NF
8-192-603-96	o	ALIGNMENT TAPE, KRV-39PF
8-192-605-21	o	ALIGNMENT TAPE, KRV-51HN
- Pending -	o	ALIGNMENT TAPE, KRV-45HPS(S-VHS)
- Pending -	o	ALIGNMENT TAPE, KRV-45PS(VHS)
8-896-024-94	o	BLANK TAPE, GR-120KG(VHS)
9-911-053-00	o	THICKNESS GAUGE
9-919-573-01	o	CLEANING FLUID
COMMERCIALLY SOLD		
		TENTELOMETER, T2-H7-UMC
		HEAD DEGAUSSER
		S-VHS BLANK TAPE

*1 SERIAL NO.10001-10030
*2 SERIAL NO.10001-10230
*3 SERIAL NO.10001-10430